Assessment of Natural Resources and the Environment: Issues and Opportunities for USAID/Sofia

Submitted to:

USAID/Sofia
Sofia, Bulgaria

Submitted by:

Alicia Grimes (EE/EEST/ENR), Gregory Myers (EE/EEST/ENR) and
Jeff Ploetz (EISN Project, DevTech Systems, Inc.)

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ACRONYMS AND ABBREVIATIONS

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
ADS	Automated Directives System
BCEG	Biodiversity Conservation and Economic Growth
BSBCP	Bulgarian-Swiss Biodiversity Conservation Program
BSP	Biodiversity Support Program
CSP	country strategic plan
DANCEE	Danish Cooperation for Environment in Eastern Europe
DCA	Development Credit Authority
DOS	U.S. Department of State
EBRD	European Bank for Reconstruction and Development
EE/EEST	Europe and Eurasia Bureau Office of Environment, Energy and Social Transition
EMED	Entrepreneurial Management and Executive Development
EPA	US Environmental Protection Agency
EU	European Union
FAA	Foreign Assistance Act
FLAG	Firm Level Assistance Group
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GoB	Government of Bulgaria
GWU	George Washington University
IESC	International Executive Service Corps
LGI	Local Governance Initiative
LOE	Level of Effort
LOL	Land O' Lakes
MAF	Ministry of Agriculture and Forestry
MoEW	Ministry of Environment and Waters
MOU	Memorandum of Understanding
MSI	Management Systems International
MWH	Montgomery Watson Harza
NBCS	National Biodiversity Conservation Strategy
NEEA	National Executive Environmental Agency
NGO	Non-Governmental Organization
NNPS	National Nature Protection Service
NRM	Natural Resource Management
OECD	Organization For Economic Co-Operation and Development
PC	Peace Corps
REI	Regional Environmental Inspectorate
RIP	Regional Infrastructure Program for Water and Transport
SAPARD	Special Accession Programme for Agriculture and Rural Development
SEED	South East European Democracy
SO	Strategic objective

UN	United Nations
UNDP	United Nations Development Program
US	United States
USAID	The United States Agency for International Development
USD	United States Dollar
USDA	United States Department of Agriculture
USFS	United States Forest Service
WB	World Bank
WWF	World Wide Fund for Nature/World Wildlife Fund

EXECUTIVE SUMMARY

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A. Introduction and Background

The purpose of this assessment on environment and natural resources was to help inform Mission planning during the development of their new five-year strategic plan for Bulgaria and to ensure USAID compliance with environmental regulations, specifically sections 117 and 119 of the Foreign Assistance Act which concern biodiversity.

In November 2001, the Europe and Eurasia Bureau's Office of Environment, Energy and Social Transition (EE/EEST) provided three technical advisors to carry out the assessment. The team traveled to Bulgaria from November 7-18, 2001, and held over 40 meetings with a diverse range of people from government agencies, donors, the private sector and non-governmental organizations. Field trips were also taken to examine issues at the local and regional levels. The team spent additional weeks in Washington, verifying information, and preparing this report.

B. Bulgaria's Biodiversity

Bulgaria holds a unique position on the European Continent with respect to biodiversity and natural resources and what they signify for the country's future. It ranks third in Europe in terms of biodiversity and has many species only found in Bulgaria (Biodiversity Support Program, 1994). The country's highly varied climatic, topographic and hydrologic conditions have allowed Bulgaria to support a wide variety of plant and animal communities. Most importantly, Bulgaria's history of rural land use patterns have helped preserve many different types of ecosystems. Bulgaria is considered regionally important for biodiversity. Some reasons for this include:

- Bulgaria possesses examples of nearly all of the main habitat types found in Europe including alpine and sub-alpine coniferous forests; meadows; peat bogs and lakes; old-growth beech forests; caves and gorges; Mediterranean shrub; steppe grasslands, and coastal wetlands.

- Bulgaria is one of Europe's most important habitats of the bear, wolf and Balkan chamois (wild mountain goat).

- The largest protected old growth beech forest in Europe is located in Central Balkan National Park.

- Bulgaria has between 3,550 and 3,750 species of higher plant species—as many as the total number of plant species in the United Kingdom, the Czech Republic and Poland combined.

- Endemic plant species (found only in Bulgaria) constitute at least 5% of the total flora, a high proportion compared with other European countries, and 574 species of plants are rare. Twenty plant species found nowhere else in the world occur in Central Balkan National Park.

- Bulgaria is located on the Africa-Eurasia migratory bird route and is strategically important for all birds making this journey. It is also the wintering ground for two species of endangered geese and the endangered Dalmatian pelican.

C. Summary of Principal Findings

1. Protecting the environment and conserving natural resources are important to Bulgarians and their government.

Article 15 of Bulgaria's Constitution states: "The Republic of Bulgaria shall ensure the protection and reproduction of the environment, the maintenance and diversity of living Nature and the sustainable use of the country's natural and other resources."

The new Government of Bulgaria (GoB) country program includes with four environmental objectives: 1) improvement of the quality of life; 2) focus on meeting environmental requirements for integration into EU; 3) passage of environmental framework legislation (Environmental Protection Act) and 4) preservation of rich biodiversity of Bulgaria.

2. Bulgaria's natural resources are key to the country's economic growth and the "quality of life" of its citizens. Conversely, the destruction or degradation of these resources has high costs to human health and private sector productivity.

Most forests in Bulgaria are found on steeply sloping lands in upper watershed areas. These forests directly protect 3.4 billion cubic meters of water in more than 2000 reservoirs used for irrigation, hydroelectric power and municipal water.

Non-wood forest products are important income sources. In 1993, export sales of mushrooms and snails totaled US $ 6 million. The value of exported botanical drugs in 1995 amounted to $15.4 million. An Italian holding company, which produces gourmet "biological" jams and preserves, reported exports of 480 tons of wild berries and rosehips per year.

3. Bulgaria has made substantial progress in protected area policy and management, and environmental awareness. USAID has been responsible for a significant part of this progress, and is now making a significant contribution to appropriate models of sustainable natural resource use.

4. The "transition" has had both positive and negative effects on the environment. Government institutions and civil society are struggling to adopt new models of administration and management. Donor interest has increased significantly in the last two years with the prospect of EU accession, but coordination remains a problem. The sector continues to be extremely dynamic.

For example, the closure of polluting enterprises reduced overall contamination of air and water. However, the weakening of state control of some natural resources (e.g., forests and game) has apparently made them more vulnerable to overexploitation.

5. **The principal environmental concerns in Bulgaria include**:

   a. Loss and fragmentation of forest due to mismanagement of newly-restituted lands; illegal logging; forest fire and air pollution;

   b. Uncontrolled hunting or poaching;

   c. Restoration and protection of wetlands;

   d. Invasive species from trade, transport and agriculture;

   e. Drought and water supply;

   f. Untreated municipal water;

   g. Non-point source air pollution from transportation, and

   h. Municipal solid waste.

6. **Cross-cutting institutional and legislative issues are contributing to the problems listed above. The impacts of a "short" ten years of transition coupled with the commitment to EU accession is highlighting institutional and policy issues as impediments for environmental management. While issues of governance remain pervasive in many areas, six key issues include**:

   a. Government institutions at all levels lack the human and financial resources for effective management and administration. Of most concern is the limited ability of government to implement policies and enforce laws, including the capacity to prosecute crimes. This is particularly true for the Regional Environmental Inspectorates (REIs) and the municipal governments, which lack finances for transport and communication to field sites for monitoring and enforcement.

   b. Judges either do not hear cases related to environmental crimes due to lack of awareness of environmental laws and changes in the laws, or lack the will to hear cases related to environmental crimes or civil complaints. At the same time, judges have reportedly not always supported legally binding contracts, a tendency that undermines investment.

   c. Prosecutors do not prosecute environmental crimes or violations due to limited knowledge of environmental laws and lack of appreciation for the costs of these crimes to private sector and society.

d. The Bulgarian Parliamentary Commission for Environment appears to have limited awareness of environment issues and their relationship with other key government priorities (e.g., trade and investment, economic growth, governance).

e. While participation in policy development has increased (public hearings, consultation with NGOs, etc.) transparency remains a concern in the development of laws and policy. For example, ministries can amend laws without holding public hearings.

f. Pressure for fast track EU accession requirements may be contributing to rapid development of laws that lack harmonization with other laws and policies.

D. Summary of Recommendations

Opportunities in the Environment can directly support USAID's emerging 5-year strategic plan. We recommend that USAID/Bulgaria consider the following options. Recommendations 2,4, (if biodiversity focus included) 7,8,9 and 10a most directly address biodiversity needs in Bulgaria.

1. **Consider establishing an IR which explicitly addresses the environment under the Mission's Economic Growth Strategic Objective.**

2. **Under USAID's Biodiversity Conservation and Economic Growth (BCEG) Project:**

   a. Encourage the Ministry of Environment and Waters and the Ministry of Agriculture and Forests to improve their communication with the Rila Monastery on developing a management plan for the Rila Monastery Forest.

   b. Consider approving a three-month no cost contract extension for Associates in Rural Development to ensure that pilot field activities become operational and lessons are disseminated nationally.

3. **Continue/follow up on environmental awareness activities being conducted under BCEG for the Parliament's Commission on Environment and Waters and MPs.**

4. **Strengthen capacity of Judicial Branch to enforce biodiversity, natural resource management and environmental laws, regulations and policies.**

   a. Utilize the existing judicial training program (MTC) to train judges about the necessity to hear cases related to environmental crimes and civil complaints, and train prosecutors to prosecute environmental crimes and administrative complaints.

   b. Focus one pilot court program on environmental law, and environmental economics. This should include an emphasis on the relationship between environmental law, trade and investment, and contract law.

5. **Under the USDA Forest Service activity, include a component to strengthen coordination between responsible GOB agencies on fire response.**

6. **Encourage the Ministry of Environment and Waters to host donor coordination meetings on the environment.**

7. **Strengthen the institutional capacity of a target Regional Environmental Inspectorate (REI) to protect reserves, enforce environmental laws, and manage information.**

    a. Explore options for alternative financial mechanisms, as appropriate;

    b. Provide models for working with civil society on environmental issues;

    c. Promote appropriate partnerships with NGOs to assist with monitoring and management of protected areas, waterways and other natural resources.

8. **Strengthen the capacity of the National Executive Environmental Agency to monitor biodiversity.**

    a. Extend experience gained under the BCEG project to help develop national level indicators for biodiversity monitoring;

    b. Improve coordination with REIs, park directors and municipalities on information management;

    c. Establish informational linkage with the "Clearing House Mechanism," that has been developed in Bulgaria as required by the Convention on Biological Diversity.

9. **Support Ecotourism planning and development.**

    a. National Level: Support efforts by the Ministry of Economy to develop and implement a strategy on tourism, particularly on alternative tourism. This could include market surveys and economic analyses to better target development;

    b. Local level: Replicate the MSI/BCEG community based park-model to targeted communities, e.g., the Rhodope region, Black Sea and Danube wetland areas, which have been identified by donors, NGOs and government as priority areas.

10. **Support sustainable natural resource and/or environmental management at the municipal level, such as:**

    a. Assisting with the development of forest management plans for municipal forests;

b. Assisting municipalities with the development of plans to improve solid waste collection and disposal;

c. Continuing support for the development of local environmental action plans (LEAPS), as formerly funded through the EPA/IAA;

d. Promoting municipality participation in regional environmental planning;

e. Promoting capacity building to attract financing for environmental projects;

f. Strengthening capacity for Environmental Impact Assessment (EIA) and promoting transparency of this process.

11. Provide funding to the Washington-based EcoLinks program to continue activities in Bulgaria.

12. Consider supporting models for sustainable smallholder agribusiness and natural resource management in rural areas (e.g., raising of rare breeds of livestock or waterfowl, non-timber forest products, or organic agriculture in "clean areas").

13. Help Finance a new "National Park Fund" to ensure sustainable funding for implementing management plan activities in the national parks.

SECTION I

Introduction and Background

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A. Purpose and Objectives of the Assessment

The purpose of the environment and natural resources assessment was to help inform Mission planning during the development of their new five year country strategic plan (CSP) and to ensure USAID compliance with FAA-related environmental provisions. Specifically, the assessment had four objectives:

1. To identify the needs for biodiversity conservation in Bulgaria and assess how the Mission strategy contributes to meeting such needs (FAA 117/119 requirement).

2. To collect additional information on the environmental sector, including cross-sectoral policy, economic and market effects, institutional capacity and rule of law.

3. To analyze and assess how environmental issues relate to USAID Strategic Objectives.

4. To inform and guide USAID/Bulgaria in their strategic planning by providing information and observations on how USAID might incorporate additional environmental activities into its program.

B. Methodology

To conduct the assessment, the team first met with representatives of USAID/Washington, the United States Department of Agriculture (USDA) Forest Service and the United States Environmental Protection Agency (EPA). The team then traveled to Bulgaria and held 41 meetings with a diverse range of people from government agencies, donors, the private sector and non-governmental organizations (NGOs) (see Annex F). Extensive documents and reports were reviewed (see Bibliography, Annex G). A field trip was taken to Bansko, Smolyan, Plovdiv and Gabrovo to interview local government officials, private citizens and NGOs regarding natural resources management and biodiversity issues at the local level. Meetings were held with USAID/Sofia staff from the Strategic Objective (SO) Teams SO 1.0 and 2.0 to better understand their programs and emerging strategy. An exit briefing was held with USAID/Sofia on November 19 to present preliminary findings and recommendations.

The findings in this report are based on information gathered during interviews as well as from documents produced by a variety of sources.

C. Environmental Requirements for Country Strategic Plans

The United States Agency for International Development (USAID) Mission in Sofia is currently in the process of developing a new country strategic plan for Bulgaria. The U.S. Foreign Assistance Act (FAA) of 1961, Section 119, requires USAID to assess national needs for

biodiversity and potential USAID contributions to these needs in all country strategy documents. Specifically, FAA Section 119(d), Country Analysis Requirements, states:

> "Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of: (1) the actions necessary in that country to conserve biological diversity, and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified. (FAA, Sec. 119(d))."

This requirement is also articulated in USAID's Automated Directives System (ADS), Section 201.3.4.11.b, on mandatory environmental analysis for strategic plans. The ADS regulations also indicate that while not required, an Operating Unit "can save time and be more efficient by including all aspects of environment when undertaking the mandatory biodiversity and tropical forestry work." For example, these environmental aspects may include topics such as water resources, urban environmental issues and private sector concerns. USAID/Sofia is one such Mission, which chose to go beyond the requirement for a biodiversity assessment and to look more broadly at environmental concerns and opportunities, which would enhance its strategy.

In October 2001, USAID/Sofia requested assistance from USAID/Washington to conduct the assessment of Bulgaria's environment and natural resources. The Europe and Eurasia Bureau Office of Environment, Energy and Social Transition (EE/EEST) provided three technical advisors—Alicia Grimes, Gregory Myers and Jeff Ploetz (DevTech Systems) to carry out the assessment in early to mid November 2001.

A copy of the Scope of Work (SOW) for this assignment can be found in Annex A of this report.

D. Acknowledgements

The team would like to thank USAID/Sofia for providing its input and support to this assignment. We would like to extend a special thanks to the Program Office, particularly Jay Lee for his assistance with coordinating meetings and to Bobbie for transporting us on the three-day field trip.

SECTION II

Bulgaria's Biodiversity and its Economic Significance

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A. Overview

1. Geography

Bulgaria is located on the Balkan Peninsula in Southeastern Europe (figure 1). It shares borders with Romania (608 km) to the north, the Black Sea (354 km) to the east, Turkey (240 km) and Greece (494 km) to the south, Macedonia (148 km) and the Serbian Province of the Yugoslavia Republic (318 km) to the west. The area of the Republic of Bulgaria totals 110,910 km^2, comprising 110,500 km^2 of land and 360 km^2 of water. In comparative terms Bulgaria is slightly larger then Tennessee and smaller then Ohio. Its population is approximately 8 million people.

Figure 1. Geographic location of Bulgaria. Source: Heritage Films, 2000

Bulgaria can roughly be divided into five distinct topographic regions (figure 2). The Danubian plain forms the northern section of the country. The Stara Planina Mountain Chain (the Bulgarian portion of the Balkan Mountains) extends from the western border to the Black Sea coast. South of the Stara Planina are the central plains. The southwestern portion of the county consists of the Rila and Pirin Mountains. The Rhodope Mountain chain lies to the east of the Pirins along the southern border with Greece. The Black Sea forms the eastern border and region of the country. Other more ancient mountain chains

within Bulgaria include the Sredna Gora (running parallel to and in close proximity to the Stara Planina) and the Strandzha Mountains located in the extreme southeast of the country.

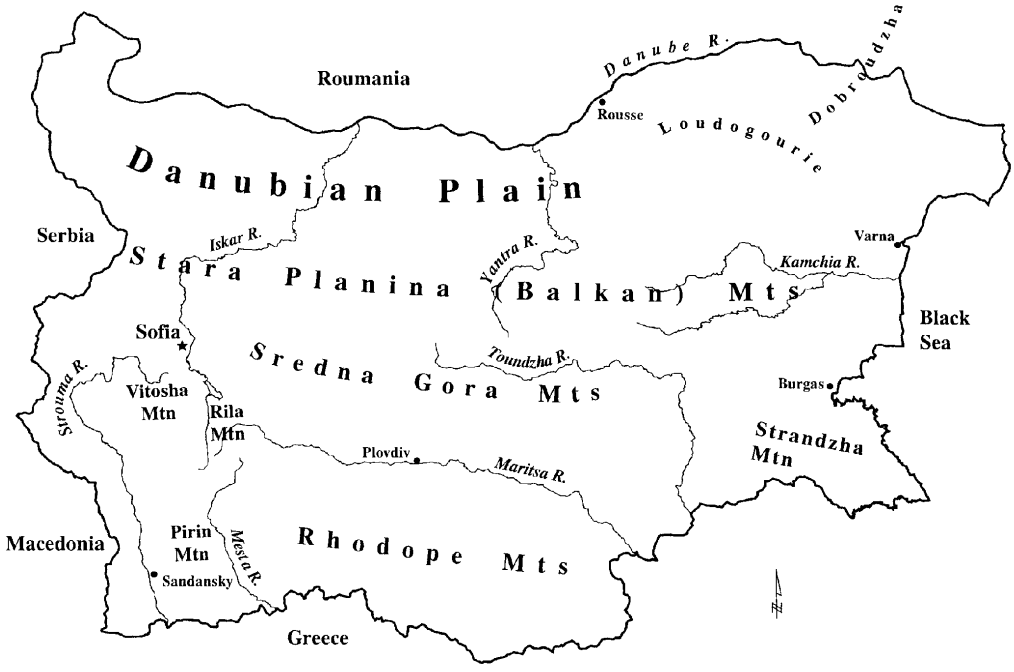

Figure 2. Topographic orientation of Bulgaria. Source: Meine, 1998

Lowlands (0-200m) cover 31% of the country's total surface area, hills (200-600m) 41%, highlands (600-1600m) 25%, and mountains (over 1600m) 3% (Biodiversity Support Project, 1994). The average elevation of Bulgaria is 470 m. There are seven mountains in Bulgaria that rise over 2000 m above sea level; the highest Moussala, at 2,925 m is located in Rila National Park.

The diversity in topography across Bulgaria has allowed for the establishment of unique ecotypes and species diversification resulting in Bulgaria being ranked 3rd in Europe in terms of biodiversity (Biodiversity Support Program, 1994). The diverse topography also provides the country with a wealth of unique and picturesque vistas and locales sought by tourists.

The climate in Bulgaria is described as "temperate; cold, damp winters; hot dry summers." Due to the country's geographic location and numerous mountain ranges, regional climates across Bulgaria are quite variable. In southern Bulgaria, for example, the climatic conditions are those of the Mediterranean type, which is characterized by long, hot dry summers. The influence from the Black Sea is limited to a narrow strip along eastern Bulgaria (Republic of Bulgaria, 2001).

The numerous mountain ranges that exist in Bulgaria also have a dramatic effect on their surrounding areas. The Balkan Mountains have the greatest influence on the country's climate as they act as the boundary between the Mediterranean climate and the southern part of the temperate climatic zone of Europe. In mountainous areas above 1000m, a mountainous climatic zone occurs with relatively low temperatures and a higher then normal annual precipitation. Snow retention lasts much longer in these regions as well, often year round at the highest elevations.

In recent years, drought conditions have persisted. Daily temperatures on average have been higher then normal while yearly precipitation has dramatically decreased. Warmer then average winters have also affected ski seasons throughout Bulgaria's resort communities.

2. Biodiversity

Regionally, Bulgaria is located at the crossroads of three bio-climatic regions. The mid-European continental, Eurasian steppe, and the Mediterranean overlap to create a range of transitional climate. Bulgaria is home to a wide variety of plant and animal communities, supporting examples from most of the European habitat types. The complex topography found throughout Bulgaria has resulted in a number of unique as well as representative communities and ecosystems. These include: "alpine, sub-alpine coniferous forests, meadows, wetlands, peatbogs, and lakes; old growth coniferous and beech forests; oak woodlands; caves and mountain gorges; Mediterranean and sub Mediterranean plant communities; steppe grasslands; riparian shrub and forest vegetation along the Danube and smaller rivers; important inland, riparian, and coastal wetlands; sand dunes, coastal limestone communities, and other unique habitats along the Black Sea coast" (National Report, 1998). The range in climate and relief found in Bulgaria has created ideal conditions for the botanic diversity, perhaps the third richest in Europe (Biodiversity Support Program, 1994).

Both the Mediterranean and European climatic regions had an influence on the flora and fauna found today in Bulgaria. The mountains of Bulgaria contain a substantial amount of the country's biodiversity. Due to unique conditions found in some of the mountainous areas many endemic species, as well as relics from the tertiary and glacial periods, can still be found. All these factors make regions of Bulgaria a high priority for conservation.

3. Flora

Bulgaria has between 3550 to 3750 vascular plant species as well as 52 species of ferns. In addition, there are 4000 species of algae, 670 mosses, as well as 600 lichens. A notable characteristic of Bulgarian flora is the significant occurrence of endemic species. There are more than 200 Balkan and 270 Bulgarian vascular species and subspecies representing about five percent and eight percent, respectively, of all known Bulgarian flora. Endemic species primarily occur in the mountains, the largest number, 90, occurring in the Central Balkan range; about twenty of them are local (Biodiversity Support Program, 1994, Meine, 1998).

The *Red Data Book of the People's Republic of Bulgaria, Volume One: Plants*, (1984), lists thirty-one species of higher plants that had become extinct in the previous fifty years. Another 150 species are listed as threatened with extinction, while the Law for the Protection of Nature protects 330 additional species.

The climax vegetation in Bulgaria is *Quercus* (xerothermic, xeromesophylic and mesophylic) up to 1000m; *Fagus* between 1000m and 1500m; and coniferous woodland up to 2200m, in which *Pinus peuce*, *Pinus sylvestris* and *Abies alba* are common. Between 2,000m and 2,500m the vegetation is predominantly sub-alpine and from 2,500 to 2,925m it is alpine.

4. Fauna

The diversity of Bulgaria's animal species ranks first in Europe (Aladzhem, 2000). Bulgaria has 35,000 species of fauna (Meine, 1998). To date ninety-four mammal species, 405 bird species, thirty-six reptiles, sixteen amphibians, 207 Black Sea and freshwater fishes, and approximately 27,000 invertebrates (including insects) have been identified (Aladzhem, 2000). Bulgaria's rich fauna is believed to include up to 35,000 species, with 20,000 identified so far. The country falls into the palaearctic zoographic region and many of the species are at the southern edge of their natural distribution (Biodiversity Support Program, 1994).

Bulgaria has a broad representation of Central European, Euro-Siberian, East Mediterranean, Mediterranean and Steppe species (Biodiversity Support Program, 1994). The preservation of substantial tracts of habitat has enabled the survival of many species endangered or extinct in neighboring European countries. Species such as brown bear (*Ursus arctos,* L), wolf (*Canis lupus,* L), golden jackal (*Canis aureus,* L), European wildcat (*Felis silvestris,* L), European otter (*Lutra lutra,* Brun), the marbled polecat (*Vormela peregusna peregusna,* Blasius) and the Balkan chamois (*Rupicapra rupicapra balcanica,* Blainville) are still found in the protected areas.

The National Report for the Biological Diversity Conservation in Bulgaria, (1998), states that seven invertebrate, three fish, two snakes, three birds, two (possibly three) mammals, and six indigenous animal breeds have become extinct. *The Law for the Protection of Nature,* a Bulgarian law designed to protect species diversity, lists forty-four species of mammals, 327 bird species and 31 species of reptiles and amphibians (Republic of Bulgaria Red Data Book, 1985).

Bulgaria maintains several important endemic (some rare) breeds of cattle, sheep, goats, buffaloes, pigs, fowl, horses, and other domestic animals. These include the Karakachan Sheep, Copper-red Shoumen Sheep and Shorthorn Rhodope Cattle.

5. Bulgaria's Protected Areas

Bulgaria has developed a comprehensive system of designated protected areas. While nature protection has existed in various forms for many years in Bulgaria, with the passing

of the 1998 Protected Areas Act the classification system of these areas has been standardized. Categorizations of these areas now comply with the system developed by the World Conservation Union (IUCN). A map of the protected areas in Bulgaria can be found in Annex B (figure 3). The objective for which an area is managed is the main criteria for its classification. This unified international system for the categorization aids in the development of legislation for protected areas and sets parameters for their management.

The network of protected areas in Bulgaria cover approximately 4.3% of the country. Annex B (figure 3) shows the dispersal and categorization of these areas throughout the country. Bulgaria's official goal is to protect 7.5% of the country's area (National Report, 1998).

Bulgaria's network of strict nature reserves (IUCN Category I) protects 80,000 ha. Eighty-three percent of the total reserve area is located within twenty-nine reserves that exceed 1,000 ha; sixty percent of that area is located within the boundaries of national or nature parks.

Bulgaria's protected areas include three National Parks (IUCN II), Rila (81,046 ha), Central Balkan (71,669.5 ha) and Pirin (40,066.7 ha); ten Nature Parks (IUCN V); seventy reserves; and more than 500 natural landmarks. Pirin National Park is listed as a Cultural and National Site under the World Heritage Convention. More than fifty of the protected areas, covering approximately 43,000 ha, are included in the UN List of National Parks and Protected Areas. The GoB is in the early stages of creating two new category V protected areas in the Rhodope region. A GEF Grant will support this effort (See Section V: UNDP/GEF Rhodope Region).

Bulgaria participates in an EU initiative known as CORINE Biotopes, whereby countries must locate and categorize all sites and biological communities of pan-European importance for conservation (see Annex B, figure 4). One-hundred-and-forty-one CORINE Biotope sites have been identified in Bulgaria, representing 12.6% of the country. Thirty-six of these sites are of the highest European significance (Aladzhem, 2000). Bulgaria also participates in a protected area network program for EU accession countries known as Emerald. It is estimated that the Emerald network will cover approximately 10-12% of the country's land area.

B. Economic Significance

Bulgaria's rich biodiversity has high economic value and is important to Bulgaria's sustainable economic growth and preservation of its heritage. In addition to valuable timber trees, game and food fish, non-timber forest products include 200 species of edible fungi and 750 traditional medicinal plants, 250 of which are considered of high economic importance. Genetic resources include traditional and rare cultivars of plants and animals and wild relatives of domesticated species important to European and Bulgarian agriculture. Game animals include 16 mammals and 24 bird species, as well as 20 fish of commercial or recreational importance.

Forests cover one third of Bulgaria's land area. Furniture and wood products constitute approximately 2.2% of Bulgaria's GDP. However, the environmental, recreational and biodiversity benefits are equally important for the future of Bulgaria's economy. About 1 million or 12% of Bulgaria's population are socially and economically dependent on the forests which form the basis of forestry and woodworking industry, hunting, eco-tourism, some livestock and other activities. Considering the multiple benefits of forests, the value of Bulgaria's forested ecosystems alone is estimated by economists to worth several billion dollars a year (Dieterle and Kehr, 2000).

> Both forested mountain and wetland habitats as well as unique limestone structures and caverns provide a very high potential for recreation and eco- tourism. Bulgaria's forests and flowering mountain meadows, wetlands and migratory birds are considered to be important assets for attracting international tourists and for the development of rural tourism.

Birdlife International has identified 50 "Important Bird Areas"[1] in Bulgaria, 33 of which are wetlands. There are currently 5 wetlands designated as being of international importance pursuant to the Convention on Wetlands of International Importance, signed in Ramsar (1971). Several globally threatened bird species use Bulgaria's wetlands for wintering and breeding habitats. Nearly 100% of the world's population of the Red-Breasted Goose winters in Bulgaria, highlighting the importance of these remaining wetlands. The recreational value of these bird areas is significant. Eighty million Americans spend an estimated $14 billion on equipment, travel and related expenses worldwide every year on bird-watching activities (Hawkins, 2001).

Bulgaria's ecosystems provide important ecological functions such as nutrient and water cycling and soil conservation. For example, most forests in Bulgaria are found on steeply sloping lands in upper watershed areas. These forests directly protect 3.4 billion cubic meters of water in more than 2000 reservoirs used for irrigation, hydroelectric power, and municipal water (Dieterle and Kehr, 2000).

Non-wood forest products are important sources of income. In 1993, export sales of mushrooms and snails totaled US $6 million. Bulgaria is the leading source country for Germany for botanical drugs, and the eighth leading exporting country globally in terms of botanical drugs (Lange and Mladenova, 1998). The value of exported botanical drugs in 1995 amounted to $15.4 million. An Italian holding company that produces gourmet jams and preserves reported exports of 480 tons of wild berries and rosehips per year which still falls far below its demand (Neri & Asiago, LTD, personal communication). A recent analysis by a consultant under the USAID BCEG project concluded that every dollar invested in protected areas yielded $2 dollars in revenue to local collectors of blueberries alone (ARD, 2001).

Given the role natural resources have played in Bulgarian society, it is not surprising that environmental protection is included in Article 15 of Bulgaria's Constitution: "*The Republic of Bulgaria shall ensure the protection and reproduction of the environment, the maintenance and diversity of living Nature and the sustainable use of the country's natural and other resources*."

[1] As classified by the Audubon Society

SECTION III

Legal and Institutional Framework Governing Environment and Natural Resources

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Legal and Institutional Framework Governing Environment and Natural Resources

Bulgaria has been a leader historically in the region for establishing laws that protect biodiversity and the environment and is setting a precedent for the harmonization of environmental policies for EU accession. A list of the many laws and international conventions adopted by Bulgaria can be found in Annex C.

A. Legal Framework

The protection and conservation of Bulgaria's natural heritage has been a consistent policy of the government throughout its modern history. The Hunting Act, adopted in 1887, less than a decade after the War of Independence, was the first legal instrument in Europe to envision measures for the protection of vultures. In 1936, the first General Nature Protection Act was adopted in Bulgaria. In 1967, Bulgaria adopted its first Environmental Protection Act, which provided the framework for environmental legislation. Since the inception in 1933 of the first nature reserves Silicosia and Parangalitza and the establishment of the first National Park, Vitosha, in 1934, the number and range of protected areas have grown steadily.

Since those early days, Bulgaria has striven to keep abreast of international ideas, norms and standards with respect to environmental legislation and actions. Bulgaria was among the first countries to adopt a National Biodiversity Conservation Strategy (approved by the Council of Ministers in 1994) after the Rio Summit on Environment. This effort, which was developed by Bulgaria's top experts with the participation of over 75 members of scientific institutions, government and NGOs, has provided a basis and conceptual framework for the country's entire environmental legislation. The National Strategy for Biodiversity Conservation is actively used as a reference for protected areas planning.

Much of the newer legislation adopted in the last 10 to 12 years has been enacted as part of the transition from post-communist rule to more market-based and democratic institutions, and more recently, the country's desire to join the European Union. As a result, the many new pieces of legislation (and amendments to older legislation) strives to reflect state-of-the-art, internationally-recognized standards and approaches to natural resource management, protection and sustainable use. In addition, several other laws affecting biodiversity, environment and natural resource use have recently been adopted. These have been drafted largely in response to EU accession requirements. They are outlined in Annex C.

Bulgaria has ratified several European and International conventions on environmental protection and participates in numerous international agreements. Bulgaria's present constitution states that international conventions ratified have the force of law, superceding current national legislation. In some cases, this will necessitate that domestic legislation is modified.

Currently, the most important laws (adopted or in draft) that regulate the management of the biodiversity and the environment are:

- Protected Areas Act (1998)
- Water Act (1999)
- Medicinal Plants Act (2000)
- Hunting and Game Preservation Act (2000)
- Genetically Modified Organisms Act (Draft)
- Environmental Protection Act (Draft)
- Biodiversity Conservation Act (Draft)

Perhaps the most important and anxiously awaited pieces of legislation affecting environment and land use are the Environmental Act and the Biodiversity Conservation Act. **The Environmental Protection Act** will replace the earlier legislation with this title adopted in 1967. It is Bulgaria's framework for all environmental legislation in the country. In addition to laying out the Government's commitment to international environmental conventions, defines roles of the MoEW, national environmental financial mechanisms, information collection system and environmental impact assessment policy.

The **Biodiversity Act** is a promised product of *the Bulgarian National Strategy for the Conservation of Biological Diversity* (1994). It is the last in a series of environmental legislation that replaces the Nature Protection Act (1968). The Act is important because it addresses biodiversity issues outside of protected areas or as an integral part of sustainable economic development. Given the timing of its development, it also is being harmonized to meet EU requirements under the Bern Convention directives related to biodiversity conservation on a landscape scale. The Biodiversity Act aims at the conservation of diversity, quantity, and area of natural habitats. It aims at increasing the size of territory that recognizes the exceptional value of biodiversity from 4.3% (present PA system) to 10-12% of the national area – covered by the National Ecological Network (Emerald/Natura 2000) [1]. It addresses conservation of genetic resources and genetic purity of wild and domesticated species as well as the conservation of local plant and animal species outside of their natural environment (ex situ – i.e. Arboretums; zoos, gene banks, etc). It regulates the introduction of exotic and alien species (a serious threat to biodiversity) as well a promoting re-introduction of local plant and animal species in their natural environments. It also regulates the trade in specimens of endangered species by enforcing CITES (Convention on International Trade of Endangered Species).

Current laws, which impact land use and biodiversity outside of parks and reserves, include four acts adopted in 1991 and 1997. These are:

- Law for Agricultural Land Ownership and Use (1991)
- Land Lease Law (1991)
- Forests and Forest Fund Act (1997)
- Restoration of Ownership over the Forests and Lands from the Forest Fund Act (1997)

1 *Emerald* is an EU euphemism for the network of protected areas and conservation habitats for countries still hoping to join the EU. *Natura 2000* is the EU term for those national areas recognized by the EU and subject to a variety of incentives, penalties, and scrutiny related to biodiversity conservation and sustainable development.

These four laws dramatically affected property rights, and subsequently the control over resources by individuals, other legal persons, and the state (see description, Annex C). These four laws reflect a significant movement toward private property rights--legalizing the development of a land market--and a market-based economy. Moreover, except for those provisions that mandate responsibility to state for protection of parks, protected areas, and in general to protect biodiversity, these laws significantly decentralize control over resources to private individuals (including business groups, associations and cooperatives) and municipalities.

B. Institutional Framework

1. National Government

Following elections in 1990, the communist regime was replaced by a parliamentary democracy. Members of the National Assembly or the Council of Ministers can initiate legislation. Under the Constitution adopted in July 1991, the President does not have a right to initiate legislation. The Council of Ministers reviews legislation before being sent to Parliament. In addition, both the Council and individual ministers may draft and insert "provisions" into law. Within **Parliament** the Commission for Environment and Waters focuses on environmental legislation.

Environmental decision-making is carried out principally by the central Government. With respect to environmental protection, the most significant central government institution is the **Ministry of Environment and Waters (MoEW)**, which has 16 *Regional Environmental Inspectorates* and 3 *National Park Directorates* based in the field. The staff of MoEW has been steadily increasing. The principal functions of the Ministry of Environment include:

- Drafting environmental legislation
- Coordinating environmental protection activities and pollution control
- Monitoring the state of environment and compliance with legislation
- Enforcement of legislation
- Protection of biodiversity and management of national parks and reserves
- Management of the National Environmental Protection Fund and the use of municipal Environmental protection funds
- Issuing permits for wastewater discharges
- Supervising environmental impact assessments

The *National Nature Protection Service* (NNPS) is a unit of the MoEW established in 1994 after the MoEW was tasked with managing and monitoring biological diversity. It is responsible for the development of policies and plans related to biodiversity, assisting in the administration of the Park Directorates and for all annual reporting required under the Convention for Biological Diversity.

Regional Environmental Inspectorates and Park Directorates
The Regional Environmental Inspectorates (REI) are the principal MoEW field units charged with implementing national policies and enforcing laws within regional units (old line regional units not to be confused with emerging new regional structures under EU accession). They assist the Ministry to prepare environmental projects, communicate laws and policies to

municipalities within their regions, and for disseminating public information on the state of the environment.

National Executive Environmental Agency
Decree 214 of 1999 reorganized the National Center for Sustainable Development into the National Executive Environmental Agency**.** It remains under the authority of the MoEW. In this new configuration, the Agency's responsibilities have been elevated, including a critical roll as a national reference center in gathering, analyzing and disseminating environmental information. The Agency is also charged with environmental monitoring and laboratory analysis.

The lead Ministry governing land use in Bulgaria is the **Ministry for Agriculture and Forestry (MOAF).** Within the MoAF, The *National Forestry Board* (NFB) supervises and manages the national forest estate (Fund), overseeing management, industry and biodiversity conservation through a system of nine nature parks (Category V protected areas).

The *Rural Department Directorate* under the MoAF will be the principal agency implementing activities under the EU SAPPARD program.

The **Agency for Civil Protection**: As of March 9, 2001, the Civil Protection Agency became a separate governmental agency reporting directly to the Council of Ministers with much broader responsibilities. The *Crisis Management Act* provides for Agency for Civil Protection to unite the effort of all institutions that have been responsible for protection of the population and the state in cases of disasters, accidents and catastrophes including forest fires (USDA Forest Service, April 2001).

The Department of Economy/ National Department of Tourism is of interest for being the lead agency in drafting the Tourism Act, developing a national strategy on tourism and promoting tourism in Bulgaria.

The Bulgarian Academy of Sciences and the AGROLES project are two other national organizations with important functions. The **Bulgarian Academy of Sciences** is responsible for collecting and analyzing data on, among other topics, brown and green environmental issues. AGROLES which has been affiliated with the MOAF but which is becoming privatized is responsible for all forest inventory, GIS and mapping.

2. Municipal Government

The Municipal Governments are responsible for administering environmental policy at the local level. Until recently, they were only able to keep 5% of fines collected from environmental abuses; the balance was sent to the national government. The new Environmental Protection Act allows municipalities to keep 80% of fines collected.

Municipalities are also responsible for developing environmental action plans (and where necessary in collaboration with bordering municipalities), which are communicated back to the national level via the Regional Environmental Inspectorate.

3. Financial Bodies

In addition to the state budget and donor financing there are two important sources of financing for the environment in Bulgaria.

National Environmental Protection Fund
The National Environmental Protection Fund, which began operating in 1993, is provided for under national legislation, and remains in a provision under the draft Environmental Protection Act. Based on the "polluter pays principal" the NEPF is funded from taxes, levies, fines and penalties paid in accordance with compliance on matters of environmental protection.. The fund is managed by a board of directors with the Minister of Environment and Waters serving as Chairman. It is assisted by an Executive Bureau. The fund finances numerous environmental and conservation activities, including basic operational costs for the 3 national parks and nature reserves. It has allocated between 60 and 70 million BGL a year over the last five years for environmental activities. Funding for protected areas has been limited to no more than one million lev (1 lev = +/- 2.2 USD) annually the operational costs of Bulgaria's three national parks.

Municipal Environmental Protection Funds
These funds are based on the same principal as the NEPF and are essentially local versions of the same.

National Trust Eco-Fund (Private, non-profit)
The National Trust Eco-Fund (NteF), a private non-profit fund, was established in the mid-nineties through a "debt for nature swap" with the Government of Switzerland. It is endorsed in existing legislation (existing and draft Environmental Protection Acts). They have demonstrated satisfactory management of more than 20 million Swiss Francs in addition to other donations from the Danish Development Agency and the World Bank. The fund has financed numerous biodiversity and environmental activities throughout Bulgaria.

SECTION IV

Issues and Threats to Natural Resources and the Environment

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Issues and Threats to Natural Resources and the Environment

A. Threats to Biodiversity and Natural Resources

The following have been identified as principal threats to biodiversity and natural resources in Bulgaria.

1. Deforestation and Forest Fragmentation

The principal activities leading or potentially leading to deforestation and forest fragmentation in Bulgaria are:

a. *Restitution*: Forests cover one third of Bulgaria's land area. Perhaps the most notable change taking place in the forest sector is the restitution and privatization of forest land and related infrastructure. For the last 50 years 95% of all Bulgarian forests belonged to the state.

As part of its transition to a market economy, Bulgaria has sought to return or privatize state assets, including forest land. The Forest Restitution Act and the Forestry Act were passed by Parliament at the end of 1997 and amended in 1999. When this legislation is fully implemented, the forest ownership structure will be restored to nearly what it was before the expropriation took place before 1947. The National Forestry Board (NFB) anticipates that forest ownership will be distributed as follows: 10% private individual owners; 3% church or schools; 5% communal forests; 30% state-owned forests with communal utilization rights and 52% state-owned forests under state management (Dieterle and Kehr, 2000).

Unfortunately, after 50 years of state forest control and a difficult economic transition period, new private and communal land owners lack both the economic incentives as well as updated knowledge, skills and tools to manage forests sustainably. Simultaneously, the National Forestry Board and the MoAF are still transitioning to a new role of delivering technical services to these new owners. Small private plots (1.5 ha average) present economy-of-scale issues: sustainable management is not economically-viable on such small areas without the reparceling or the establishment of producer groups.

Under current economic, social and institutional conditions, the anticipated result of forest restitution is that some degree[1] of deforestation or forest fragmentation is inevitable. Deforestation may in some cases be associated with temporarily increased soil erosion and/or hydrological impacts. In Bulgaria, all arable lands with a grade of over 6% (72% of all arable lands) are affected by water erosion,

1 While hard to predict, according to the World Bank, "significant levels" of deforestation and fragmentation will occur (Dieterle and Kehr, 2000).

representing 4,823,011 ha, or 43% of the total area of Bulgaria (GOB 2001). We observed that most forest occur on lands with a grade greater than 6%.

b. *Illegal logging* and uncontrolled felling of trees for firewood: A second and immediate cause and concern related to deforestation and forest fragmentation is related to illegal logging. In many rural areas, firewood is the main (and cheapest) source of fuel and most readily available. The State Agency for Investigations estimates there are about 250 illegal timber sawmills processing timber for such purposes as charcoal for Turkey and furniture for Greece. This was supported by anecdotal stories heard by the team. Additionally forest arson on public land is suspected as a cause of many forest fires, since it is easier to acquire timber through salvage operations.

c. *Forest Fire*: Fire is a bigger threat to economically-valuable forests than it is to biodiversity specifically, but it is of great interest and concern to most Bulgarians because of severe fire seasons in the year 2000. Bulgarian forests are very prone to fires due to overstocking of monoculture species and lack of thinning of natural forests. This makes them extremely flammable under the current conditions of drought. Bulgaria suffered a large number of highly destructive wildland fires during the summer of 2000 affecting 54,000 hectares of forested land. There were over 73 homes lost with an estimated $23 million USD in damage to forested areas. Over $35 million USD was expended suppressing fires.

A USDA/Forest Service wildfire assessment team visited Bulgaria in April 2001(See Republic of Bulgaria Wildfire Technical Assessment Report, USDA Forest Service, April 2001). The USDA/FS team found that there was a general lack of preparedness to cope with wildland fire emergencies, particularly of the larger magnitude. Issues include: a need to improve coordination among responsible entities at national, regional and local levels; a lack of skills among pilots and fire fighters; inadequate equipment (including protective gear and communication equipment) and water systems. In particular, the assessment found poor facilities and little specialized equipment at the municipal level.

The USDA team found that the cause of wildfires was difficult to determine because 70% of fires are not investigated and categorized as "unknown" in origin. Anecdotal evidence suggests that a large percentage of wildland fires are the result of arson, up to 50% or more by some estimates. After land restitution and privatization of forests beginning in 1993, some owners or heirs set fire to their land in hopes of getting back their original plot of land, a better piece of land, for timber salvage (logging—often illegal), or simply for revenge (USDA/Forest Service, 2001).

Agricultural burning is a contentious problem because of conflicting legislation on the legality of burning. According to the USDA/FS team, illegal agricultural burns are classified as an administrative offense, not a criminal offense and hence they don't provide a deterrent. Administrative penalties for arson are not proportional to the act with fines as low as $10-250 USD. The issue of burning 'agricultural stubble' was a topic of great interest a recent donors meeting hosted by MOAF on fire.

2. Illegal hunting and Overharvesting

Poaching is considered to be a major threat to many species, including protected species. In a recent incident, Italian tourists were reportedly caught (but not prosecuted) with 20,000 songbirds that they had killed during a one-week period. Only 100 of these were classified as legal game species and a significant portion of these were species protected by law (G.Gerassimov, personal communication). Fish and non-wood forest products, specific plants and certain species of game have been reduced due to overharvesting. This is partly due to a lack of understanding of wildlife population dynamics and translating this knowledge into management policies that are effectively implemented.

3. Loss of habitat, particularly wetlands

Ninety percent of Bulgaria's wetlands have been destroyed over the last century, primarily along the Danube and Black Sea coast. Only 11,000 ha of wetlands remain today of the approximately 200,000 ha at the turn of last century. A large percentage were drained and converted to agricultural areas. Others were destroyed as a result of dyke construction, alteration of natural river courses, conversion of valleys and lakes to reservoirs, and conversion of native forests to poplar and locust plantations. The species composition of wetlands in close proximity to agricultural land can be significantly impacted by fertilizer runnoff (personal communication, Sergey Dereliev, Bulgarian Society for the Protection of Birds, 2001).

The remaining wetlands in Bulgaria are of global importance as Bulgaria's geographic location places it along a major migratory bird route. Birdlife International has identified 50 Important Bird Areas in Bulgaria, 33 of which are wetlands. Several globally threatened bird species use these wetlands as wintering and breeding habitats. Nearly 100% of the world's population of the Red-Breasted Goose winters in Bulgaria, highlighting the importance of these remaining wetlands.

4. Introduction of alien invasive species

An "alien invasive species" is defined as a species (or its eggs or spores) that is 1) non-native to the ecosystem in question and 2) whose introduction causes or is likely to cause economic or environmental damage (US Executive Order 13112, 1999). Invasive species can be plants, animals, or microbes. Human activity is the primary means of invasive species introduction. In particular the rise in global trade and international travel has led to the introduction of alien species worldwide through such things as ballast water from ships[2], packing crates, infected produce or live pets, and even muddy shoes. Species of fish, animals and plants introduced for agriculture, forestry, ornamental landscaping or soil conservation can also escape and become established in the environment. Biological

[2] A recent study showing the benefits of removing oxygen from ballast water, which kills most aliens, offers some hope for stemming future invasions from this source. Originally it was seen as too expensive, but the anticorrosion benefits of oxygen removal may prove to be an economic incentive (ENS, 2002).

invasions of non-native species is considered by most biologists to be one of the most devastating threats to the environment. Invasions can also be economically devastating (*i.e.* hoof and mouth disease in UK and USA; gypsy moth in N. America).

Two of the most well known cases of alien invasives affecting Bulgaria occurred in the Black Sea. In 1946, *Rapana thomasiana*, a gastropod from the Sea of Japan, seriously impacted the mussel and oyster fishery. In 1982, a large ctneophore (jelly-fish) known as *Mnemiopsis leidyi* appeared in the Black Sea, possibly introduced from ships from the Atlantic coast of N. America. By the end of the 1980s, *Mnemiopsis'* total biomass in the basin was estimated at 1 billion tons (Vinogradov, et. Al. 1989 in letter from MoEW 1999). Scientists concluded that the sharp decline in the main commercial fish, the anchovy was due to *Mnemiopsis*. Unfortunately, solving the Mneiopsis problem is proving to be very difficult.

Bulgaria is known for its freshwater biodiversity. The World Conservation Union (IUCN), stated in a recent publication (2000) that the number of threatened inland freshwater species has increased in all plant and animal groups in Europe. Unfortunately, there is insufficient data in Bulgaria to access the impact of invasives on freshwater species (WWF, Europe and Middle Eastern Program website). There is also very limited data available on the status and impact of invasives in other ecosystems, but the MoEW, Bulgarian Scientists and NGOs all consider invasive alien species to be a major threat to biodiversity.

The potential impact of the introduction 'genetically-modified organisms' GMOs on biodiversity has not been adequately studied, but is a concern to some biologists in Bulgaria. Monsanto reportedly has been conducting open-air trails of certain GMO crops in Bulgaria.

5. Air pollution impacts on forests

Air pollution is having a significant impact on forest health in Bulgaria. Air pollution has caused a high rate of defoliation of trees with 35% of coniferous and 21% of deciduous trees being moderately to severely damaged. Deposits of pollutants far above critical loads have been found in the Danube valley and substantial areas of the middle and western regions of Bulgaria (Pan European assessment).

6. Climate change and drought

Bulgaria is considered by some to be one of the most susceptible European countries to impact from high temperatures and dry summer weather. This is in part due to its geographical location, and in part due to its topographical characteristics.

Bulgaria has suffered from drought conditions for the last 16 years (BSP, 1994, and personal communication, Holly Higgins, USDA, 2001), but it is unclear whether these conditions reflect natural weather variability or a longer-term climatic trend.

If the drought is merely a recurrent phenomenon consistent with the natural variability of weather patterns that characterize this area, then biodiversity impacts are likely to be

limited. Under a scenario of prolonged drought, the greatest impacts would likely occur to freshwater aquatic ecosystems (e.g., wetlands), especially isolated surface water systems subject to drying entirely, and the aquatic species that rely on them. The extent and duration of impact would probably correlate with the extent and duration of the drought. This assumes that species are not subjected to other simultaneous pressures (e.g., loss of habitat or invasive species), which would affect their ability to adapt.

If the recent drought reflects a longer-term climatic trend, conversely, the biodiversity impacts could be more substantial. That's because in addition to these same kinds of aquatic biodiversity impacts, the biodiversity of terrestrial ecosystems could also be gradually affected as vegetational shifts occur. The nature and extent of such impacts, however, are conjectural.

B. Other Environmental Problems

1. Air pollution

Emissions of key pollutants in Bulgaria have decreased significantly since the 1980s, and particularly since 1990 mainly due to a fall in economic output. In general however Bulgaria still has a high emissions of air pollutants, particularly sulfur oxides. In 1995, sulfur oxide emissions are over three times the average for OECD European countries and over twice the levels in Poland and Hungary. The new GOB confirms that these values are still the "most unfavorable for Europe" (National Strategy for the Environment, 2001).

Air quality is the direct result of emissions from different sources. The are 14 areas defined as "hot spots" having a high degree of air pollution from industrial sources. The pollution in these regions has one or several components including dust, sulfer oxides, nitrate oxides, lead, mercury, cadmium, dioxins, polyaromatic hydrocarbons, and others (National Strategy, October 2000). Heavy metals precipitate out of the air and contaminate soils, water and farmland. Fortunately, emissions from this sector have declined with the reduction in industrial output, and are expected to be contained with new regulations and introduction of new technology.

The use of low quality fuels for heating continues to be a persistent source of air problems in Bulgaria. Seventy percent of this is pollution from low quality lignite coal that has a low thermal capacity and high ash and sulfur content. Households not covered by district heating use poor quality lignite or light oil. Finally, most households in smaller towns and villages use firewood. Firewood is a dirty fuel and may be the cheapest (tends to be non regulated or illegally harvested) and it is still very available from forests. However, trends in this sector should be monitored, including the impacts of energy policies. For example, enforcement of fuel pricing policies in Armenia actually drove both urban and rural populations to switch to fuel wood, with serious impacts on the forest (World Bank, 2001). The annual greenhouse gas inventories indicate combustion processes as the main source of green house gases in Bulgaria and thus most of the emission reduction measures are oriented toward fuel and energy production and use (GoB, 2001).

The transportation sector is an area of concern for Bulgaria and other CEE countries. The total annual emissions from the transport sector have increased significantly since 1998 with the increase in fuel consumption. Most vehicles are over 10 years old and use diesel gasoline with a high percentage of sulfur content, which is ten times higher than the EU standard. While standards exist, there is a lack of enforcement of these standards and the law is unclear as to which agency is responsible for enforcing them (REC, interview 2001).

2. Solid Waste

The amount of waste generated in 1997 was 48 million tons, mostly from industrial sources. There are currently 2000 unregulated landfills in Bulgaria. Per EU accession criteria mandates, this number must be reduced to 50 in the next six years. Currently many villages and rural communities are not included in any centralized waste collection strategy. This results in the use of hillsides, riverbeds and streambeds as disposal sites for local refuge. Many view these "dumps" as an impediment to fostering local tourism. Biological concerns include contamination of rivers and soils and as a vector for disease. Additionally many of the landfills in Bulgaria are routinely burned releasing enormous amounts of pollution. The burning of tires is a particular, yet overlooked, problem. With each tire burned several gallons of toxic liquid are released into the soil, not to mention the contaminates released into the air.

3. Hazardous Waste

During the last few years in Bulgaria, an average of 1.3 million tons of hazardous waste was generated; 40% of this waste is included in the 11 types of largely hazardous waste (Ministry of Environment and Water, National Strategy, 2000).

Uranium mining waste is a concern, in the Rhodope region. More than 20 million tons of waste, deposited in 3 tailing ponds and around 300 waste piles remain from past mining and processing activities. Over 1.7 million square meters of agricultural and forest lands have been deteriorated and /or contaminated. More then 1,000 liters/sec of contaminated water is discharged from the uranium mining sites. The waste rock piles have radioactivity values in the range from 2-3 up to 100 times higher than the background values for the different sites in question (National Strategy, October 2000).

4. Municipal Wastewater

In Bulgaria, 70% of the population is connected to a sewage collection system. Of the collected sewage, only 43% is treated before being discharged. The environmental ramifications include increased nutrient loads in aquatic ecosystems (leading to algae blooms that can have a detrimental effect on other aquatic life). This discharge also contains other pollutants (e.g., heavy metals) that can contaminate the food chain and sometimes affect human health.

C. Cross-cutting Institutional and Legislative Issues

1. Legislative Challenges

a. Harmonization of Laws and Legislative Constraints

In the last couple of years, Bulgaria has undertaken substantial policy reform in preparation for EU accession. The danger of such rapid progress is that some laws may not be well- harmonized or may contradict other laws. In general, Bulgaria has a process of legal review intended to prevent this. The Council of Ministers reviews all legislation for cross-sectoral conflicts before it is passed to the Parliament where it goes through two readings. When conflicts are identified, amendments are issued.

While people interviewed on conflicts between Bulgarian land use laws expressed some concerns, the team could not find specific examples of such conflicts from a legal perspective. Deputy Minister of Foreign Affairs was also of the conviction that there were no conflicts in the written laws and that Bulgarian legislation is well harmonized. Given the pace of policy reform, however, some conflicts are likely to exist at least temporarily, or may emerge.

A more serious concern is the apparent mixed interpretation of laws by different institutions and groups. Conflicts seems to be more a factor of interpretation: there is a lack of understanding of new laws; there are vague articles and provisions, and lack of specific guidelines and regulations to guide implementation. The result is mixed or uneven implementation, as politically-competing bodies can effectively claim differences in interpretation. Unfortunately, this problem is not easily corrected by simple amendments.

With respect to harmonization with EU requirements, legislation is reviewed three times, twice in Bulgaria and once in Brussels.

2. Institutional Weaknesses

a. Difficulties in National Implementation of Law and Policy

Government institutions at all levels lack the human and financial resources for effective management and administration. Government at the national level has a limited number of staff to carry out many functions, particularly with regard to development of new laws and policies, and their implementation. Preparation of staff varies—there are a number of highly-trained experts, but they frequently lack state-of-the-art knowledge of modern natural resource management and biodiversity conservation approaches. The pressures to meet the EU accession deadline (constantly changing, but most recently moved to 2004[3)] may be exacerbating this situation (see below).

[3] Source: interview with Bulgarian Prime Minister Saxe-Coburg-Gotha in *Frankfurter Allegmeine Stellenmarkt*, Dec, 12, 2001

Indeed, not only are there significant demands to draft policy and laws to meet EU requirements, but Bulgaria is being flooded with EU (and other donor) environmental projects. These projects have, in many ways, outstripped the capacity of government to absorb further EU and other donor funds or manage the projects.[4] At the same time, they are unable to carry out many of their normal duties such as law enforcement and monitoring, or providing needed services to the private sector.

b. Incomplete Decentralization

The quality of governance in Bulgaria continues to suffer from excessive centralization of government, as verified in USAID's recent democracy assessment. As elaborated below, local governments suffer from a lack of control over finances and decision-making authority. This greatly slows the implementation of environmental actions throughout Bulgaria.

The re-establishment of a regional level of government in 1997 (governors appointed to head 28 new regions) has introduced further confusion. Since these governors are appointed and not elected, they are seen as extensions of the national government and representatives of their political parties and not representatives of the regions. Yet, they currently hold veto power over decisions of municipal councils. They will be charged with developing regional development plans, including on the environment (i.e., water basin plans). It is not clear how this new regional governmental structure will effect the current structure of national bodies such as the Regional Environmental Inspectorates or local State Forestry Boards which are still organized along old territorial divisions.

c. Weakness of Regional Environmental Inspectorates

The MoEW's Regional Environmental Inspectorates (REI's) play a critical role in enforcing environmental laws and legislation as they are located in the field. However, because they too suffer from limited financial and human resources, they are unable to carry out their many duties. For example, in Plovdiv, the REI is supposed to manage two protected areas of high biodiversity and enforce rules and assess violation fines (including illegal poaching, pollution, dumping and arson) for violations. Only one guard is assigned to police the two reserves that are located at extreme opposite ends of the Plovdiv region, additionally, there are only two biologists to monitor and assess environmental impacts on biodiversity.

One of the main functions of the REI, enforcement, requires that once a perpetrator of civil or criminal violation of environmental law is caught, the REI prepares a brief for consideration by local prosecutors and police. The REI staff are not trained as lawyers, and again, because of limited staff are unable to adequately fulfil this function. As a result, environmental crimes, such as poaching, illegal timber harvesting and arson are not sufficiently addressed.

[4] In 2001 the EU made approximately 50 million Euros available for environmental programs. The total EU accession program budget for Bulgaria is more than 250 million Euros per year. Funds have been returned to the EU each year because the Bulgarian government has been unable to use them in a timely or appropriate manner.

In addition, the REIs are charged with gathering (brown and green) environmental and biological information from municipalities and passing it along to the MoEW headquarters in Sofia. At the same time they are supposed to pass information on the environment, and new regulatory requirements adopted at the national level, to the municipalities. This function appears to happen ad hoc, again, as the REIs lack the staff to carry out this duty. Finally, REI resources are further stretched by demands from the municipalities to assist them with their required duties.

Of concern is the future financing of the REI's. The team learned that the MoEW has made statements requesting each subordinate body to become financially self-sufficient. This can only be done through donations from the private sector, the same private sector they are tasked with monitoring and fining for environmental infractions.[5]

d. Weakness of Municipal Government

Municipalities, the lowest level of government, have the fewest financial resources and capacity to implement environmental laws and policies. More than national government, they lack trained staff and have a high turnover of personnel. Moreover, they are constrained by legislative requirements that limit their ability to raise funds (through taxation or fines),[6] and more importantly, they have limited discretionary spending powers. In addition, approximately 80% of expenditures in the municipalities are mandated by central government guidelines. As a result, the municipalities have significant difficulty managing their environmental responsibilities.

The municipalities are charged with several functions, at least four of which are critical to management of natural resources and biodiversity. First, municipalities are supposed to identify crimes (e.g., poaching, illegal timber harvesting, etc.) and bring them to the attention of the police and the REIs. Second, they gather environmental data and pass it along to the REIs and, in turn, receive environmental information (such as new laws and policies) from the REIs. This information is then to be communicated to the community. Third, the municipalities are responsible for managing forests that have been restituted to them. The Ministry of Agriculture and Forests reports that approximately 30% of all forestland in the country have been restituted to municipalities. And fourth, the municipalities are charged with developing "local environmental action plans" (LEAPs—which identify priority problems and needed actions through participatory processes) and communicate it to the REI. Again, due to limited resources, it is unclear if any municipalities are able to do any of these functions (let alone all of them) adequately.

Perhaps the most important concern, and potential threat to biodiversity, relates to municipal government responsibility to manage the 30% of forests restituted to them.

[5] This has not been confirmed as official policy.

[6] A recent draft of the Environmental Protection Act gives a greater share of resources from fines (up from five percent to 80 percent) to Municipalities. However, if municipal government is constrained in the allocation of funds, or are unable to manage programs due to lack or trained personnel, these extra funds will have marginal utility.

The team heard several anecdotal stories where municipal governments were unable to manage their forests, or in some cases had intentionally cut tress (without the approval of the Forestry Department) to pay the costs of critical municipal functions.

e. Administrative inefficiencies and lack of coordination between agencies

Administrative structure and process is cumbersome and "turf battles" of some units prevent efficiency gains that could be achieved through delegations of authority and better coordination. Coordination between land use agencies is still in need of improvement although there appears to be evidence of improved relations and communication between the MoEW and the MoAF. Better coordination is particularly needed in protected area management, conservation policy vs. hunting and forestry, and response to forest fires (the last one between Civil Protection, MoAF, MoEW, Municipalities and others).

f. Lack of Transparency

While participation in policy and program development has increased significantly in the last two years (via public hearings, consultations with NGOs, press releases and active media) transparency in the development of policy and laws continues to be a concern. For example, ministries can legally change or amend laws (via the adoption of regulations) without public hearings and without having the law go back before parliament.

An example of this can be found in the two recent Management Plans for Rila and Central Balkan National Park. In both plans the Council of Ministers added a last minute section that essentially allows for the extraction of up to 25% of the parks (timber) biomass over a ten year period of time, contradicting the Protected Areas Act.

g. EU Accession at the expense of cushioning economic shock

The GoB focus on EU accession, particularly toward economic integration, may inadvertently undermine some sectors of the economy (particularly for the large part of the population most impacted by economic shocks brought about by the transition). For example, in the land restitution process that was recently completed, at least 70% of the landholdings are less than 1 hectare in size. A land market has not developed, and for the foreseeable future, the majority of landholders will be smallholders. However, Bulgarian agricultural policy is geared toward export to the EU, and does not appear to adequately focus on economic opportunities for sustainable smallholder production (at least one major donor in Bulgaria, the World Bank, was also concerned about this.). Many smallholders could be left out of the development process, at least in the early stages and until a viable land market evolves. A further erosion in income equality, purchasing power and an increase in unemployment will drive rural inhabitants to exploit natural

resources (e.g., timber for fuel, collection of nontimber forest products, etc.) and use their smallholdings in nonsustainable ways.[7]

h. Rule of Law and Judicial Concerns

Of most concern to the team and to many of the people we interviewed is the limited ability of Government to enforce laws, including prosecuting crimes. Government officials in Sofia and at the Regional Environmental Inspectorate in Provdiv reported that judges do not hear (or even calendar) cases related to environmental crimes or civil complaints. The reasons given were varied, including: judges lack knowledge of environmental laws, the laws are changing too rapidly for judicial officers to keep current, or because judges felt that these types of cases were not very important because they did not "involve victims."

The limited knowledge of environmental laws or the need for enforcement is endemic throughout many government agencies (see songbird example in Section IV).

In addition, REI staff reported that prosecutors do not prosecute environmental crimes or violations due to limited knowledge of the laws and a lack of appreciation for the costs of these crimes to the private sector and society.

Finally, there is growing concern that the courts are not enforcing civil contracts, which is undermining investment security and thus foreign investments in new environmentally sound technologies. For Bulgaria to be competitive on the global market its industries will have to become ISO14001 compliant. Without the enforcement of environmental laws there is little incentive to do so.

i. Lack of Financial Resources for Environmental Interventions

Although over the last few years funding for environmental activities has increased in the national budget to about 2% of GDP, limited financial resources hinder the management of existing environmental programs and the adoption of new (often legislatively mandated) activities at both national and local-levels. Moreover, most of these resources are spent at the national level on water pollution and supply (30%), air pollution (37%) and waste (14%)[8], only about two-tenths of a percent of the budget is spent on "protection of biodiversity" and another 4% is spent on "forests."

The MoEW funds national parks through the *National Environmental Protection Fund (NFPE)*. Funding for the three National Parks is budgeted at one million lev ($500,000) per year. This amount is only sufficient to cover staff salaries and basic operational costs; it does not cover the implementation of activities within their management plans such as visitor services, infrastructure and monitoring. The strict reserves are severely under-

[7] The team witnessed, for example, many rural households that rely solely on fuelwood from nearby forests to provide winter heat.

[8] Latest data is from 1999, reported in the National Strategy for Environment and Action Plan 2001-2006. GoB, May 2001.

financed and understaffed, as are the Regional Environmental Inspectorates who are charged with managing them.

The majority of funding for the environment (83%) comes from "other sources," most of which are grants and loans from bilateral and multilateral institutions, while only 4% comes from the state budget and another 12% comes from the NFPE. The NFPE acquires its resources from environmental fees assessed. The dependence on donor assistance for the bulk of environmental activities is a concern, as funds will not always be available from these sources, particularly after accession is completed.

The greatest and growing demand on resources for the environment is being generated by EU environmental accession requirements. The new *National Strategy for Environment and Action Plan 2001-2006* states that by the year 2015 environmental costs will reach between 4.3 and 5.2 % of GDP, representing more than a 100% increase in funding, and that the majority of these costs will increasingly be born by municipalities and the private sector through increased taxes and fees.[9] The report argues that this will be particularly hard to achieve given a projected GDP annualized growth of 5% between 2000 and 2015, and suggests that the government consider a "transition period" for EU environmental requirements that would delay implementation of some directives until sufficient resources are available.

j. Information Constraints

Although government has in place a system to collect environmental information, thus far the process has been ineffective and inefficient. The National Executive Environmental Agency has a clearly defined roll, as stipulated in the Environmental Protection Act, to collect and disseminate environmental information. Nevertheless, information is not systematically collected from the municipalities and transmitted to central government institutions, nor does the reverse happen with central government transmitting environmental information to the municipalities and civil society. Once this information is collected, it is unclear how, if at all, it is used.

Moreover, the Agency does not have indicators for monitoring biodiversity. Biodiversity monitoring is a new requirement for Bulgaria under the international Convention on Biodiversity. Decisions regarding investment, which affect the environment or rely on natural resource exploitation are not always made with adequate information, consequently uneconomic and potentially environmentally-damaging decisions are made.

[9] Ibid pp. 127-129.

SECTION V

Government, Private and Donor Actions to mitigate Environmental Threats

SECTION V

Government, Private and Donor Actions to mitigate Environmental Threats

A. GOB Responses

The Bulgaria's Council of Ministers recently published *its National Strategy for the Environment and Action Plan 2001 –2006* approved on 31 May 2001 (Resolution No. 455). It also established an Inter-ministerial Commission for control and coordination of the implementation of the National Environmental Strategy and Action plan with members (at the deputy level) of almost every government agency as well as representatives of the National Association of Municipalities, the Bulgarian Chamber of Commerce, the Bulgarian Academy of Sciences and an NGO representative. The MOEW is charged with reporting on its progress to the Council of Ministers.

In a public statement issued in December 2001, the new GoB announced its commitment to environment with four objectives: 1) improvement of the quality of life; 2) focus on meeting environmental requirements for integration into EU; 3) passage of environmental framework legislation (Environmental Protection Act) and 4) preservation of rich biodiversity of Bulgaria.

Much of the GOB activity is being driven by internal and external pressure to fulfill requirements for EU Accession, a primary GOB priority. There is an overwhelming amount of environmental requirements and a great deal of the GOB's energy is being spent on harmonizing environmental legislation to be consistent with EU policies for accession countries. This process brings with it a large amount of EU donor assistance, particularly in the form of "twinning projects" between EU government agencies on different environmental topics (i.e. see EU Phare section below). In addition, Bulgaria is making an impressive effort to participate in the United Nations process and to fulfill its obligations on international treaties and conventions.

The MoEW has prepared a draft project "fiche" for submission to the EU entitled "Capacity-building support for the implementation and enforcement of the Bulgarian nature conservation legislation." This aims to: increase the capacity of Central, Regional and Local Government structures and NGOs dealing with the implementation and enforcement of Bulgaria nature conservation legislation; to increase the technical capacity of Regional Government structures that implement and enforce Bulgarian conservation legislation and to increase public awareness which aims at strengthening its various units through increased staffing and financing. This is notable for several reasons. First it demonstrates a recognition by the MoEW of institutional deficiencies and strong willingness to correct these. Second, it recognizes the role of NGOs in natural resource management and third, if funded, it will address some of the institutional concerns raised in this report.

B. Private Sector/Civil Society Responses

There is a core number of NGOs in Bulgaria which focus on environment and biodiversity conservation. These include Green Balkan, the Wilderness Fund, the Bulgaria Society for the Protection of Birds, and "This is my Environment" (TIME) Foundation. However there are a number of smaller emerging NGOs such as the Rhodope Youth Environmental Organization and Balkani which show a lot of promise of becoming effective, active organizations at the regional and national levels. Other types of NGOs include regional Associations of Municipalities which aim to address environmental concerns at the local level; and numerous youth, church and educational organizations.

C. Other Donors

Donor activities in the environmental and land use sectors have increased significantly in the last two years. The prospect of EU Accession has meant a surge of proposed assistance programs by the EU. Annex D contains a listing of all currently known donor activities directly related to biodiversity conservation, environmental protection, agriculture or forestry. Donor activities in the environment of most interest to USAID include the following:

1. Government of Switzerland

The Swiss support three significant programs related to biodiversity and forest conservation: the Bulgarian-Swiss Biodiversity Conservation Program; the Sustainable Forest Management Project and the BioSelena project. Funds are channeled through the Swiss Development Corporation and ProNatura.

a. The *Bulgarian-Swiss Biodiversity Conservation Program (BSBCP)* has been the second significant bilateral donor in addition to USAID supporting biodiversity conservation through protected areas management in Bulgaria during the last decade. BSBCP has been supporting the development of management plans for several important wetland areas as well as Strandja Nature Park through partnerships with NGOs. BSBCP and its NGO partners have also worked in coordination with USAID and the MoEW on the collection of data and management planning, for the high mountain meadows in Central Balkan National Park. In addition, the program has supported the establishment of several visitors centers which serve to inform the public on biodiversity.

   BSBCP has entered its Third Phase of assistance, which covers the period from 2001-2004 at a funding level of 1 million Swiss Francs. They will continue to work in the areas which they have supported in the past—Coastal Dubruja wetlands, Bourgas Lakes, Strandja Nature Park, Central Balkan Park and Eastern Rhodopes, but will now be providing more significant support to Pirin National Park (which was hampered in the past due to institutional obstacles). BSBCP will devote significant resources to the developing a management plan for Pirin National Park, with a goal to have a draft plan by October 2002, and public hearings in the Spring of 2003, in order to comply with the time table of the Protected Areas Act.

The BSPCP support for Pirin National Park is considered critical. Pirin is Bulgaria's third National Park (in addition to Rila and Central Balkan) and a UNESCO World Heritage Site of international importance. However, its administrative directorate and management planning has lagged way behind that of the other two national parks which received USAID support since 1995. Furthermore, it has been a park under enormous pressure due to the presence of Bulgaria's most popular ski resort town, Bankso, at the foot of the mountain. For some reason, the GOB did not demonstrate its commitment to this important park which has become a source conflict between environmental groups and development interests in the international public media. There has been continued concern by local residents and environmental groups about ski development interests that have infringed upon the park as well as the transparency of related Environmental Impact Assessments.

The Swiss exit strategy from BSBCP is notable. The Swiss plan on converting BSBCP into an actual legal Bulgarian Foundation (Bulgarian NGO with a board of at least 2 people) which will operate independently to assist other existing NGOs. Technical assistance and backstopping will be provided by Pro Natura, a Swiss NGO.

b. The Swiss-supported *BioSelena* is an agricultural extension service supported by the Swiss Government. They provide consulting services to farmers interested in converting to organic farming. The first few years of effort have resulted in the formation of a farmer owned and operated cooperative "BioBulgaria" that exports 100% of their produce to the EU. Farmer participation continues to grow as well as interest in organic farming. Bioselena provides limited credit for the purchase of farming equipment and covers the cost for the first organic certification (by Swiss certifiers) of a farm.

c. *Sustainable Forestry Project (SFP)*: The SFP is in its second phase which will last until the end of 2003. It has a total funding of 2.5 million Swiss Francs. The aim of the project is to introduce sustainable forestry management practices at the local and national level. At the national level, it is supporting the GOB (MoAF/National Forestry Board) on its political framework and have developed guidelines on the national forestry structure as well as supported efforts to establish national criteria and indicators for forest certification. At the field level, organizations can apply for support to establish pilots to test sustainable forest management practices. Pilots have been established in beech forests in Central Balkan, oak forests in Stranja, and more recently, in conifer forests in the Eastern Rhodopes. The SFP identified a critical need for a national strategy on forests and is not yet clear on the direction of NFB under the new government.

2. Government of Denmark

The GoD, through the Danish Cooperation for Environment in Eastern Europe (DANCEE) has emerged as the new significant bilateral donor in the area of natural resources

management and biodiversity conservation. DANCEE support to Bulgaria will concentrate on the implementation of the EU *environmental acquis* and the international nature conservation conventions. Also, DANCEE will provide assistance in integrating sustainable use of natural resources with other land use policies, especially the water basin plans and the regional development plans.

Of particular interest is the newly funded *Project for Conservation of Species and Habitats in Bulgaria*. While Bulgaria has set aside significant biodiverse areas as national parks, reserves or other forms of protection, it lacks a systematic network to ensure that all habitats and species of national and international interest are maintained or restored in a conservation status which is considered favorable to the EU. The establishment of such a network is required under the Bern Convention (Emerald) and is prerequisite for accession to the EU (Natura).

This $2 million dollar project will assist Bulgaria to establish a systematic network of candidate sites in accordance to the Natural 2000 criteria. It will build capacity of the MoEW, MoAF, their regional offices, scientific institutions and NGOs to carry out inventories and to identify potential sites, and promote participation of local authorities and stakeholders in biodiversity planning and management. The project will be based in the National Nature Protection Service (NNPS) of the MoEW and work closely with the Ministry of Agriculture and Forests, the Ministry of Regional Development and Public Works and local authorities. The project will last for 3 years.

Denmark's support for the establishment of this network signifies that another donor will be addressing the issue of creating and operationalizing a national system which physically links protected areas with important biodiversity areas outside of parks (Emerald network) by which makes it easier for USAID to graduate from biological inventory work and protected areas planning.

3. UNDP/GEF Rhodope Region

The UNDP has just approved a Block B (planning) grant to Bulgaria to develop a project to conserve the globally-significant biological diversity of the Rhodope Mountains in southern Bulgaria. The vision for the full project is to use a landscape approach to conservation by supporting both protected areas management and sustainable use outside protected areas to enhance the sustainability of small scale protected areas. Plans are being developed in two sub-regions-- the Eastern Rhodope (approximately 2,500 km^2) and the Western Rhodope (approximately 4,000 km^2). Activities will be focused in two newly proposed Nature Parks (of which approximately 2/3 is forested area), as well as in other sensitive ecosystems and landscape components such as buffer zones and corridors. The project envisions integrating biodiversity conservation objectives into development activities and related policy, particularly with respect to forestry, agriculture, water-use and infrastructure; and establishing effective management of priority protected areas.

The project will be implemented in partnership with the MoAF, the MoEW and several NGOs. The assessment team met with UNDP representatives and consultants who are

administering this project. The project is ambitious, yet necessary in this region of high biodiversity and high unemployment. If such a project succeeds, it can provide a notable model for sustainable development in the region. Coordination of all the various elements and partners will be a challenge and there is no clear sense of a central coordinating body for this effort at this time. Funding is insufficient to achieve all the goals of the project and additional funding/in-kind contributions are being sought, including from USAID. The Rhodope area is of interest to USAID because of its high unemployment (50%), presence of ethnic minorities, and its past successful work with the Rhodope municipalities.

4. World Bank/GEF Wetlands Reconstruction

A primary problem affecting aquatic biodiversity and economic fisheries in the Black Sea and Danube River are the high levels of nutrients due to wastewater from agricultural operations and livestock farms. The WB/GEF Wetlands Reconstruction project will assist the Government of Bulgaria in meeting its national and international commitments to reduce transboundary nutrient loads and to conserve biodiversity in the Danube and Black Sea Basins through improved management and sustainable use of natural resources and restoration of wetlands. The project will assist the GOB to restore critical priority wetlands in the Danube river basin to renew their important function as nutrient traps. It will also promote protected areas management and sustainable use of natural resources, and public awareness and environmental education. The project is expected to play a critical demonstration role within the region and help to promote nutrient reduction investments in other parts of Bulgaria and neighboring countries.

As a WB/GEF project, the activity has gone through the WB project cycle with many studies conducted as part of preparation. Its funding level is USD 12.5 million. The WB/GEF financing covers 7 million, but the Ministry of Environment and Waters must find the rest of the co-financing before implementation can begin. While it has a high cost due to infrastructure capital required, the Wetland Reconstruction project is considered a pilot, as further investments will be needed by all countries on the Danube to restore these ecosystems for nutrient capture.

This project however is causing some concern in the Rural Development Directorate of MoAF as it will involve the flooding of some arable lands and displacement of some farmers. The most important component, therefore, will be alternative income-generation to mitigate social impacts of the affected communities. So far, the Swiss and Danes have expressed interest in wetlands management and EU Phare (see below) on the conservation component. The WB is suggested that USAID could make a potentially worthwhile contribution in the area of eco-enterprise or alternative agribusiness development.

5. EU Programs : SAPARD and Phare

SAPARD is the Special Accession Programme for Agriculture and Rural Development. SAPARD, using funds from the EU, is assisting the 10 applicant countries of central and eastern Europe with structural improvements to their agricultural and rural environments. The projects assist with agricultural production, product processing, marketing and general

rural development activities.[1] With SAPARD funds, recipient countries are entirely responsible for project design and management. In Bulgaria, SAPARD supports the 2000-2006 National Agriculture and Rural Development Plan (NARDP). NARDP has two main objectives:

a. Improvement of agricultural production efficiency and promotion of a competitive food-processing sector by better market and technological infrastructure and strategic investment policies ultimately aimed at reaching EU standards.

b. Sustainable rural development consistent with the best environmental practices by introducing alternative employment, diversification of economic activity and establishment of necessary infrastructure. This in turn will improve the living conditions and standards of rural communities, generate fairer income and open up employment opportunities.

Bulgaria is eligible to receive approximately 53 million Euros on this program each year during the seven-year program from 2000-2006.

The **Phare** program is the main channel for the EU's financial and technical cooperation with central and eastern Europe. It was set up in 1989 to support economic and political transition activities, and in the last few years has been refocused to assist the ten candidate countries for EU accession in preparation for membership. For the period from 2000 to 2006 Phare will supply eleven billion dollars in bilateral assistance for institutional support through "twinning," technical assistance and investment support. The "twining" program allows civil servants from EU member states to be seconded to accession state governments for long-term service and transfer of skills. In Bulgaria, Phare focuses on a wide range of activities, including development of new legislation (including implementation of the 'acquis communautaire,' which is the EU's body of legislation) and support to administrative structures, governance, and the environment.

[1] 55% of Bulgaria's population lives in rural areas.

SECTION VI

USAID's Program

Section VI

USAID's Program

A. Overall Program

American assistance to Bulgaria began in early 1990 with $2 million in grants designated for strengthening the political process by supporting free and fair elections. The U.S. Government has since contributed more than $390 million in South Eastern Europe Development (SEED) assistance to Bulgaria through 2001. The primary emphasis of USAID's assistance has fallen under two general areas: Economic Growth and Restructuring (SO 1.0) and Democracy and Governance (SO 2.0). This is complemented by a Social Transition strategy (SO 3.4) and Special Initiatives (SO 4.1) and Cross-Cutting Programs (SO 4.2), which promote national and regional stability through unique programs.

In the area of economic growth and restructuring, USAID has worked to foster a competitive, private sector led, market-oriented economy in Bulgaria. The focus of the efforts have been projects which have built a network of private business support institutions; improve the legal and regulatory framework for business development; create jobs; provide access to credit; stimulate local economic development; and, support public-private dialogue on strategies for private enterprise growth. Since 1997, efforts have shifted from specific assistance to individual enterprises to increasing support to business and professional associations, with a recent focus on a pool of priority industry clusters, viewed as potential catalysts of the Bulgarian economy's competitiveness. These include tourism, agribusiness, canning and apparel, among others.

In the area of democracy and governance, USAID/Bulgaria has focused its efforts on supporting capacity building of local government institutions and non-government organizations that support the voice of civil society. Complementing these efforts, USAID supports reforms in the Bulgarian judicial system by increasing the professionalism of the judiciary and improving court administration. USAID also works to achieve increased, better-informed citizen participation in public policy decision-making by building the professional capacity of the independent broadcast media as well as by strengthening the capacity of non-governmental organizations to obtain political access, services, and resources. Under its Local Government Initiative, USAID promotes decentralization and the adoption of a favorable legal framework to provide local governments with the authority to match responsibilities; to establish financial tools, resources and practices for the creation of a sound municipal finance base and, to develop more efficient and participatory local administrations.

To mitigate the adverse social impacts of the economic transition, USAID has committed itself to supporting Bulgaria's social sector reform. This has included assisting in pension reform and health sector financing; reducing unemployment by initiating microprojects in areas of high unemployment; and building human capacity through technical training and academic programs.

B. USAID Support for Environment and Biodiversity—Past and Present:

Although USAID/Bulgaria does not have a Strategic Objective related to the environment, it has had a significant portfolio of important environmental programs in both the natural resource and energy sectors. Most importantly, *USAID has been the lead donor in the area of biodiversity in Bulgaria*, investing approximately $1 million per year in protected areas management and related institutional and policy strengthening at the national level. USAID/Bulgaria has been one of only two Missions in the E&E region (the other being Russia) with a significant commitment to Biodiversity and can be considered to be the leading USAID E&E Mission in its biodiversity achievements due to its long-term, focused and systematic investment over last ten years.

With USAID support, Bulgaria became the first country to develop a *National Biodiversity Conservation Strategy* (NBCS) after the country signed the Biodiversity Convention at the Rio Convention in 1992. USAID supported the development of the NBCS through the Biodiversity Support Program (BSP)[1] beginning in 1992. One of the most notable aspects of the NBCS was the high level of participation in its development. More than 75 Bulgarian scientists, government officials, and NGO representatives convened to describe Bulgaria's biodiversity resources and to define conservation visions, goals and priority actions. This document and its related studies are still widely used and referred to in Bulgaria. The NCBS is the basis from which the GoB/MoEW has based its National Biodiversity Conservation Action Plan, and its new 6-year National Strategy for the Environment. It has set out the basis for the establishment of the Natura 2000 protected areas network required under the Bern Convention (about to be started with Danish support) and helped Bulgaria meet its requirements under the international Convention on Biological Diversity. The NBCS also identified policy needs, such as the development of a Biodiversity Conservation Act, which has been drafted and awaits review by Parliament in 2002.

Two major USAID projects emerged based on the NBCS framework. From 1995-2000, the *Bulgaria Global Environment Facility Biodiversity project* (or "GEF" project)[2] was designed to strengthen the GoB's management capacity for biodiversity at the national and local levels. The GEF Project provided support to the newly-organized MoEW to develop legal frameworks and administrative units at Bulgaria's two most important National Parks: Rila and Central Balkan. Support resulted in the development of legal frameworks—including the passage of the 1998 Protected Areas Act, and the executive order to establish the National Park Directorates--park management plans, fully staffed and equipped Park Directorates, partnerships between parks and outside organizations and increased public awareness.

In 2000, USAID designed the *Biodiversity Conservation and Economic Growth (BCEG) project* as a follow up activity designed to build upon the results under GEF and to ensure institutional changes were sustainable. BCEG supported the completion of management plans for Rila and Central Balkan National Parks, including facilitating public hearings on these plans as required by the Protected Areas Act of 1998, and helped guide the MoEW/National Nature Protection

[1]The Biodiversity Support Program is an USAID-supported consortium of the World Wildlife Fund, The Nature Conservancy and the World Resources Institute.

[2] The Global Environment Facility (GEF) was created in late 1990 to provide financial resources to address global environmental issues. The GEF has received funds through parallel and co-financing arrangements and contributions to the core fund. The Bulgaria GEF Biodiversity project represents part of the US contribution of parallel-financed USAID projects to the GEF during its initial three-year pilot phase.

Service (NNPS) maneuver through the GoB approval process for management plans according to the law for the first time in its modern history. BCEG has also introduced new concepts of sustainable eco-enterprise development in communities surrounding the parks, to provide needed economic opportunity for and support from these disadvantaged populations. Operational models for eco-tourism and non-timber forest products are being established through pilots and implemented cooperatively between the National Park Directorates and interested private stakeholders (local tour operators, hotels, craftspeople, transportation companies, etc. or berry-pickers, exporters in the case of NTFPs). Park based ecotourism is new in Bulgaria and the model developed under BCEG could have very useful lessons that could be replicated in other areas in the country.

There are two other areas which BCEG is addressing and for which there is no precedent in Bulgaria. The first is the development of a management plan for Rila Monastery Forest, a category V Nature Park in which 90% of the land is under restitution to a private landowner, the Rila Monastery (Bulgarian Orthodox Church). The second is the development of innovative financial mechanisms to increase and ensure a minimum amount of financing for parks and protected areas in Bulgaria.

The territory for the Rila Monastery Forest (31,047.2 ha) was originally part of the Rila National Park plan, but was removed and re-categorized as a Category V Nature Park (which allows for multiple land owners), due to a long-standing restitution claim by Bulgaria's largest and most famous Rila Monastery. The GoB asked USAID to provide assistance through its contractor ARD to develop a management plan for this park. USAID agreed under the condition that it be done with the participation of the principal stakeholders, including the MoAF (responsible for Category V management) and the Rila Monastery (future primary land owner). A long-standing conflict between Church and State characterizes this situation. The Monastery is refusing to engage on management planning of the area without the restitution of a remaining piece of territory –a strict Forest Reserve—which is "exclusive property" of the State, according to the Protected Areas Act (1998). USAID and its contractor are seeking to resolve this complex situation..

As stated in an earlier section the lack of financing for managing protected areas in Bulgaria is a major concern to USAID, donors, the MoEW and related stakeholders. ARD, in partnership with the MoEW and other stakeholders, has been tasked to identify and establish innovative financing mechanisms to address this concern. ARD has explored many options and their related legal and institutional constraints. Current thinking is the establishment of an endowed trust under the National Eco-Trust Fund which would enhance and stabilize funding (see also section on recommendations).

Energy Efficiency and Environmental Management: In addition to its support in the biodiversity area, USAID has been assisting Bulgaria in the environmental sector since 1991, in the areas of environmental policy and planning, cleaner production and efficient energy use. USAID's Municipal Energy Efficiency Project assists selected Bulgarian municipalities and companies in introducing energy saving technology and developing financing mechanisms for energy efficiency. Projects are initially funded under a Development Credit Authority (DCA) agreement with the United Bulgarian Bank, providing U.S. Government guarantee of up to 50% on energy

efficiency loans. A major result is that the project has secured $1.00 of commercial project financing for every $0.11 of technical assistance. These have been the first municipal energy efficiency project loans secured in Bulgaria under USAID's loan guarantee facility totaling a ceiling of over $6 million. Contribution to Biodiversity Conservation (117/119 requirement): USAID's investments in the Energy area have indirectly supported biodiversity by reducing greenhouse gases which mitigates climate change, a major long term threat to biodiversity.

Through regional efforts, USAID has provided support to the US Environmental Protection Agency (EPA) for training and demonstration activities on environmental policy and regulation, air quality and solid waste management. Bulgaria has been among the two top countries to benefit from the EEST/ENR ECOLINKS program, a regional initiative supported by USAID which promotes regional and US partnerships in the area of environmental technology, in coordination with the US Foreign Commercial Service. Since June 2000, Bulgarian entities have been awarded 15 challenge grants with average funding levels at $ 45-50,000/each to support activities related to municipal water, energy, energy efficiency, waste minimization and cleaner transportation. In addition, the EcoLinks Trade Representative in the Foreign Commercial Service has successfully catalyzed trade partnerships that have resulted in millions of dollars of investment in environmental technologies by US companies. Contribution to Biodiversity Conservation (117/119 requirement): these environmental activities contribute indirectly to biodiversity conservation by strengthening environmental management and reducing harmful air and water pollution which is a threat to ecosystem health.

Another regional program in which Bulgaria is a participant is the *Regional Infrastructure Program for Water and Transport* (RIP). RIP is an initiative under the Stability Pact between the Balkan nations, the United States and the European Union to support economic renewal, democracy and security in the region. The objective of USAID's technical assistance under RIP is to facilitate infrastructure projects related to water and transport services by assisting with project preparation, project procurement, leveraging donor financing and legal/regulatory frameworks. In Bulgaria, USAID has been supporting financial feasibility studies and advising on proposals for road projects planned by the Bulgaria's Road Executive Agency, which will be considered by the European Investment Bank. While not all of RIP is necessarily "environmental," a large part of the water supply problem could be addressed through improved infrastructure.

SECTION VII

Recommendations: Opportunities for USAID Support

Section VII

Recommendations: Opportunities for USAID Support

A. The Relationship between Environment and USAID's Strategy

There are clear linkages between "the environment," Democracy & Governance and Economic Growth. The case is clear in Bulgaria as illustrated below.

1. Democracy & Governance

The following points illustrate the Environmental Links to D&G:

- The way in which people gain access to, control over, defend rights to and manipulate natural resources is directly dependent on governance including property rights, rule of law, transparency, a functioning judicial system, information and access to markets. At the same time, these factors (access, control, etc) impart the evolution of governance.
- Natural resources "scarcity" either through degradation or lack of access and insecurity is a major source of conflict worldwide.
- Environmental issues have been an unusually effective "wedge" issue for DG reforms: In the E&E region, environmental organizations played a major role in mobilizing citizen action to bring down old state structures and begin the democratic transition.
- Democratic reforms and globalization are illuminating the extent of "organized-crime" (sometimes government sponsored or tolerated) in the illegal use of natural resources for economic and political gains by elites worldwide. Corruption has thrived in this sector because richer natural resources are often in remote and border locations, characterized by poverty and cultural diversity. The potential economic gain is enticing criminal groups to poorly paid controlling officials. (USAID Draft Action plan on Illegal Logging and Conflict, 2001).
- Most natural resource programs, including the BCEG program, inevitably include components such as policy reform, participation of civil society in decision-making, public-private partnerships, conflict resolution, decentralization and delegation of authority from Central to local units, transparency and accountability, and public awareness/information dissemination.
- The most pervasive environmental problem in Bulgaria identified in this assessment was the inability of GoB agencies to enforce laws, implement policies and prosecute environmental crimes.

2. Economic Growth

The following points illustrate how environment is linked to economic growth:

- Bulgaria's forests protect 3.4 billion cubic meters of water in more than 2000 reservoirs used for irrigation, hydroelectric power and municipal water, including drinking water

(Gerhard and Kehr, 2001). Water is an important resource for EG activities in the agribusiness, light industry and tourism sectors.

- Management Systems International, George Washington University Business School and others, have identified alternative tourism linked to natural resources (eco-tourism) as an important competitive sub-sector for Bulgaria.
- In 1993 export sales of mushrooms and snails totaled US $ 6 million. The value of exported botanical drugs for Bulgaria amounted to $15.4 million (FAO, 1998). Bulgaria's wild raspberries and blueberries are considered by the gourmet industry to be among the best tasting in the world (personal communication, 2001). An Italian holding company outside of Plovdiv, Bulgaria which produces reported exports of 480 tons of wild berries and rosehips per year for the production of gourmet "biological" jams and preserves. The resources present the opportunity, but their mismanagement would represent an economic loss.
- Investment costs for Bulgaria to meet EU harmonization is estimated between US $5.58 and 8.04 billion at 1998 prices (World Bank in National Environmental Strategy, 2001). Approximately 54% of this will be borne by Municipalities and approximately 40% by the private sector.

B. Recommendations

The following recommendations range from small program adjustments to larger investments that can be considered by USAID in the area of Environment and Natural Resources. These recommendations were reached after considering two important criteria: a) the work of other donors --either for gap analysis or for coordination and b) USAID's strategic focus. The Mission will also have to consider what is in its manageable interest. Several of these recommendations address the needs for biodiversity conservation in Bulgaria, in keeping with the FAA 117/119 requirement.

1. Create an IR on Environment under the Economic Growth Strategic Objective.

During the biodiversity and natural resources assessment, USAID emphasized the need to make an explicit link between environment and economic growth. Because of the importance of environment to economic growth, the team recommends USAID make this explicit causal linkage by creating an Intermediate Result related to environment. Timing: Immediate/Short-term

2. Under USAID's Biodiversity Conservation and Economic Growth (BCEG) Project:

a. Encourage the Ministry of Environment and Waters and the Ministry of Agriculture and Forests to improve their communication with the Rila Monastery on developing an management plan for the Rila Monastery Forest.

The development of a management plan with participation of all relevant stakeholders is critical for the establishment of sustainable land uses of this highly biodiverse area. The USAID Contractor, ARD, has been tasked with facilitating the

development of the management plan with the participation of these stakeholders. USAID intervention is needed to raise the importance of the issue among the partner GoB agencies so that work can be accomplished before ARD's contract expires in October 2002. ARD has creative ideas for helping the interested parties achieve their goals without compromising their principal interests. Timing: January 2002.

b. Consider approving a three-month no cost contract extension for Associates in Rural Development to ensure completion of deliverables.

The BCEG project is scheduled to end in October 2002. However, the Ecotourism pilots could benefit from a full season during which participants could implement activities. Furthermore, the project would like to hold a national/regional workshop on Ecotourism after results are achieved in the early fall, which would be an excellent way to disseminate project results. There is also an opportunity for BCEG to contribute to the development of a new strategy for alternative tourism being developed by the Minister of Economy. The resolution of the Rila Monastery issue will entail a renewed process with new members of the new Government which could delay the delivery of the management plan for this territory. As of December 2001, the project had sufficient funds for a no-cost extension. Timing: late Spring/early Summer 2002

3. Continue/follow up on environmental awareness activities being conducted under BCEG for the Parliament's Commission on Environment and Waters and MPs.

The BCEG project is undertaking activities and events to raise the awareness of Parliamentary commission on Environment as well as MPs from the regions of Rila, Central Balkan and Pirin National Parks on protected areas concepts, policies and management issues. USAID could continue to develop educational materials and events on other environmental matters such as cross-sectoral policy issues related to environment directed to Parliamentarians. Timing: 2003

4. Strengthen the Capacity of Judicial Branch to Enforce Natural Resource and/or Environmental Laws, Regulations and Policies.

USAID, under its Democracy and Governance Program could:

a. Utilize the existing judicial training program (MTC) to train judges about the necessity to hear cases related to environmental crimes and administrative complaints, and train prosecutors to prosecute environmental crimes and administrative complaints.

b. Focus one pilot court program on environmental law, and environmental economics. This should include an emphasis on the relationship between environmental law, trade and investment, and contract law. Timing: Short-Medium term.

5. **Under the USDA Forest Service activity, include a component to strengthen coordination between GOB agencies on wildfire response.**

If possible and appropriate, ensure that steps are taken in the direction of improved coordination between responsible GOB agencies on wildfire response to alleviate the observed problem of varying perceptions among government agencies regarding their respective roles in responding to forest fire emergencies. The USDA Forest Service could advise on inter-agency planning. At a minimum, USAID and the Forest Service should encourage the Agency for Civil Protection to establish a working group on this matter. Timing: During 2002.

6. **Encourage the Ministry of Environment and Waters to host regular donor coordination meetings on the environment.**

Donor coordination remains vitally important particularly with the increase of EU funded programs. This activity could help inform and strengthen the new MoEW Minister and Deputy Ministers on issues, overlap and opportunities among the many donor activities in the environment and natural resources sector. Timing: as soon as possible.

7. **Strengthen the institutional capacity of a target Regional Environmental Inspectorate (REI) to protect reserves, enforce environmental laws, and manage information.**

    a. Explore options for alternative financial mechanisms, as appropriate;

    b. Provide models for working with civil society on environmental issues;

    c. Promote appropriate partnerships with NGOs to assist with monitoring and management of protected areas, waterways and other natural resources. Timing: optional

8. Strengthen the capacity of the National Executive Environmental Agency to monitor biodiversity.

a. Extend experience gained and methodology developed under the BCEG project to help develop national level indicators for biodiversity monitoring.

b. Improve coordination with REIs, park directors and municipalities on information management;

c. Establish informational linkage with the "Clearing House Mechanism," which has been developed in Bulgaria as required by the Convention on Biological Diversity.

9. Support Ecotourism planning and development.

Tourism has been identified as one of seven competitive industry clusters in Bulgaria for USAID support. An assessment by MSI recommended diversification of tourism products and development, including the offer of more niche travel experiences employing cultural, historic and natural resources in the mountains and countryside (Rosenbaum, 2001). During this assessment, tourism has been identified as a top priority by the new Minister of Environment and Waters and the Deputy Minister of Economy. Interviews with NGOs, Park Directorates, municipal associations and villagers (GWU) revealed a strong interest in developing rural, eco- and nature related tourism. The BCEG project has also gained valuable experience on tourism. Two areas where USAID could provide valuable assistance are:

a. National Level: Support efforts by the Ministry of Economy to develop and implement a strategy on tourism, particularly on alternative tourism. This could include supporting economic analyses and market studies to better target development;

b. Local level: Replicate the MSI/BCEG community based park-model to select communities, e.g., the Rhodope region, Black Sea and Danube wetland areas, which have been identified by donors, NGOs and government as priority areas.

Under the BCEG project, Associates in Rural Development (ARD) has developed a community-based modes for ecotourism linked to parks. This model could be extended to other areas in Bulgaria. The Rhodope Mt. area is one which has extensive natural forests, caves, meadows and cultural amenities as well as strong NGO partners. It also is an area which suffers from 50% unemployment. With the establishment of new nature parks in the region, this could be a potential geographic location for ecotourism development. The communities impacted by the construction of wetlands are in need of alternative income-generation. Ecotourism opportunities will have to be better targeted based on further studies including economic analyses and market surveys. Work under the BCEG project on such studies to inform the national tourism strategy being developed by the Ministry of Economy could be useful. Timing: Design/procurement (Summer, 2002) to coincide with closing of BCEG so activity can begin in 2003.

10. Strengthen sustainable natural resource and/or environmental management at the municipal level, such as:

a. Assisting with the development of forest management plans for municipal forests;

b. Assisting municipalities with the development of plans to improve solid waste collection and disposal;

c. Continuing supporting the development of local environmental action plans (LEAPS), possibly through the interagency agreement with the U.S. Environmental Protection Agency, which successfully facilitated these in the past;

d. Promoting municipality participation in regional environmental planning;

e. Promoting capacity building to attract financing for environmental projects;

f. Strengthening capacity for Environmental Impact Assessment (EIA) and promote transparency of this process.

Much of the weakness in environmental management is at the municipal level. USAID has the advantage of past experience working with the municipalities under its Local Governance Initiative and already has an established relationship and knowledge of their functioning. One third of restituted forests has gone back to municipalities and they are evidently being immediately harvested without proper management. There are opportunities to tie municipal forest management with support to the woodworking sector and to forest certification which might increase market access in Western Europe. Municipal solid waste is another potential area, but it has less implications to biodiversity conservation. Timing: Optional, but activity will take time to achieve results so ideally a 3-4 year activity would begin in 2003 or 2004.

11. Provide funding to the Washington-based EcoLinks program to continue activities in Bulgaria.

The EcoLinks program has been a success in Bulgaria with 36 Challenge Grants awarded to Bulgarian private sector companies that are partnered with US firms or firms in other CEE countries to address environmental problems through technology. The networking opportunities provided through the Department of Commerce have generated millions business opportunities or savings for companies involved in wastewater treatment, energy efficiency, and other areas. Issue: budget cuts and reorganization may affect EcoLinks program.

12. Consider supporting models for ecologically-sustainable agribusiness targeted farmer communities (e.g. raising of rare breeds or waterfowl, non-timber forest products or organic production or extraction in 'clean areas' (non-contaminated).

Eighty percent of farmers in Bulgaria have farms that are less than a hectare. With the growing gap in income distribution, it is critical that this portion of the population not be left behind. There is a wide consensus among some donors, contractors and individuals that Bulgaria may have a competitive niche in organics, wild products such as berries or even native breeds of livestock such as the Karakachan Sheep, Copper-red shoumen sheep or shorthorn Rhodope Cattle. Projects such as the Swiss-funded BioSelena have successfully work with an association to form a cooperative and obtain certification for export of clean products. SAPARD support may be available. Issue: a national certification body and national standards may be a few years away; it will require organization of cooperatives and time will be needed but could be worth it. Timing: to be coordinated with EG/agricultural activities and opportunities identified by other donors. Will require an investment of time (ie. 3 years) to achieve results so should begin in 2003 or 2004.

13. Help Finance a new "National Park Fund" to ensure sustainable funding for implementing management activities in the national parks.

To address the issue of lack of financing for parks and protected areas, USAID could help launch and finance a National Parks Fund which employs the management structure and legal mandate of the National Trust Eco-Fund. The National Trust Eco-Fund is an established fund management mechanism already endorsed and prescribed by law. It possesses a Board, an Executive bureau and demonstrated capacities and abilities to manage a National Park Fund. Preliminary discussions within the NTEF indicate that they could open and operate the National Parks fund within their existing charter.

C. Addenda: USAID's Environmental Program: Future considerations

In considering the future of USAID/Bulgaria's Environmental Portfolio there are three broad questions to consider:

1. What are the links between Economic Growth and Environment and best organize results for reporting?
2. What should be the environmental focus, "Green" or "Brown"? Should one be emphasized or should each be pursued to support the Mission's Strategic Objectives?
3. Is USAID/Sofia ready to ease out of supporting biodiversity inventory, monitoring and protected areas management and if so, what would be an appropriate exit strategy?

1. Links to other Strategic Objectives and Reporting:

In the past, USAID/Bulgaria administered and reported on its environmental activities under Strategic Objective 4.2 "Special Initiatives" under its Program Office. A decision has been made by USAID was to simplify its results framework and eliminate the cross cutting and special initiative under its new strategic plan. True cross-cutting issues are being identified and will still be addressed, but their management structures are still under development. The Program Office however, will be relieved of its specific programmatic responsibilities.

Environment is clearly a cross-cutting issue as it has both governance and economic growth implications (see discussion above). Good governance facilitates better environmental management, which in turn supports increased, more sustainable economic growth. Due to the importance of the Economic Growth objective, USAID/Bulgaria has emphasized the importance of tying Environment to Economic Growth.

2. Environmental Focus: Green vs. Brown

As mentioned, USAID has supported a number of "brown" (ie. urban/industrial) environmental activities in the past, but most of these have been through regional environmental programs. For example, the U.S. Environmental Protection Agency (EPA) has conducted a number of activities in the area of municipal solid waste and local air quality through an inter-agency agreement (IAA) out of the EE/EEST/ENR region. This support was very important, particularly in the early to late 1990's. It had good results and highly appreciated by Bulgarians, including by the Executive Environmental Agency, the MoEW, the REC and the municipalities where pilots took place. ECOLINKS has also been considered a successful program by the E&E Regional Bureau and by Bulgaria. It has generated some significant trade and investment in environmental technology at no cost to the Mission.

There are a number of brown issues which hinder economic growth including such things as past pollution hindering privatization of industrial plants, and the economic costs of meeting new standards for air and water quality. In addition, municipalities identified sewerage treatment and solid waste as priority environmental issues. Unfortunately, it was impossible for this team to assess the full range of environmental issues in the two-week period provided. However, it is important to note that the number of donor supported projects in the environmental area has greatly increased in the last two years with the prospects of EU accession. A World Bank GEF project has successfully been addressing the clean up of "past pollution" by industries so that they could be privatized. EU environmental agencies are setting up twinning projects with Bulgaria on other environmental matters to demonstrate how EU requirements can be met in the environmental area.

The emphasis or mixture of green vs. brown will depend on funding level, manageable interest and opportunities for partnerships

The most significant political commitment and (bilateral) financial investment by the Mission has been in the area of biodiversity and protected areas. As the most visible and leading donor in this area, which has been under threat due to weak political commitments on the GoB side, it has been very important for USAID to see its assistance through to a reasonable point during which it can feel more comfortable in exiting and claiming success. Achieving real, sustainable results in the complex area of environmental protection and management requires a minimum significant core of funding sustained over a period of years to strengthen institutions and instill awareness, attitudes and motivation. Given Bulgaria's rich natural resources, its long-term investment in biodiversity, and the network of relationships formed in this sector, it makes sense to build upon USAID's past successes in the green area.

3. Should USAID exit from supporting Parks and Protected Areas?

As mentioned, as the most visible and leading donor in the area of biodiversity conservation through protected areas, it has been very important for USAID to see its assistance through to a reasonable point during which it can feel more comfortable in exiting and claiming success. USAID's commitment was particularly paramount right through the late 1990's when questionable GoB understanding and commitment was hindering the passage of important legislation to secure protected areas. Furthermore, no park or reserve management plans had been approved and restitution of forest areas was only beginning. USAID's assistance has been identified by numerous GoB employees and civil society as being the most effective for both institutional strengthening, participatory planning as well as for keeping biodiversity and protected areas high on the GoB's radar screen. Because of weak GoB commitment and capacity issues, USAID's withdrawal from this subsector in 1999 would have likely compromised its multi-million dollar investment in establishing protected areas which were managed for biodiversity conservation and sustainable recreation.

The situation in Bulgaria has changed since 1999. The prospect of EU Accession has sped up the development and passage of environmental legislation and has increased the number of European donors. GEF funding has been secured to begin more serious planning of new protected areas in the Rhodope region. The Swiss have extended their support to management planning in protected areas through 2003 and hope to leave behind a new Bulgarian NGO that will offer technical assistance in this area. Most importantly, however, the Danish Environmental Protection Agency has just signed a new 3-year project with the MoEW to establish a network of protected areas. This makes it more comfortable for USAID to diminish its status as the lead donor in Protected Areas management and to direct its efforts to other critical needs.

Securing USAID's investment in Rila and Central Balkan National Parks will likely be accomplished by the end of the BCEG project (October 2002), although some components may need a little more time before they are "operational" particularly the Ecotourism pilots, the financial mechanisms, and the Rila Monastery Forest Management Plan. For the ecotourism pilots to be completed on schedule will require timely support in finalizing their business plans and securing financing. It will also be ideal for them to have a complete season (through September) to demonstrate results. After much research, ARD has identified a financial mechanism to support park management plan implementation—an endowment window under the National Eco-Trust Fund. Its viability however, will depend upon leveraging financing. Finally, the Rila Monastery Forest Management Plan development will depend on easing the conflict between Church (landowner) and State (land use regulator) at least to the minimum degree to bring the parties to the table. If this is not done, this could be a significant loss of investment for USAID and the GoB as it would for sound, participatory land use management of a highly biologically-diverse area. There is no indication that other donors would pick this up in the foreseeable future.

Annex A

Scope of Work

Annex A

Scope of Work: Strategic Environmental Assessment: Bulgaria

I. Purpose and Objective

The purpose of this task is to conduct an assessment of biodiversity conservation needs and related environmental issues for the purposes of complying with sections 117 and 119 of the Foreign Assistance Act of 1961, as amended, and country strategy guidelines under ADS 201.3.4.11 and ADS 204.5.Based on this assessment, assist the Mission to define how its new five-year country program strategy contributes to conservation needs, as required by agency regulations. This assessment will also serve as a planning tool to assist USAID/Bulgaria in better integrating environment concerns into its overall program.

II. Background

B. Environmental Policies guiding USAID Strategies

USAID/Sofia is currently in the process of developing a new country strategic plan for Bulgaria.

The U. S. Foreign Assistance Act of 1961 Section 119 requires USAID to assess national needs for biodiversity and potential USAID contributions to these needs in all country strategy documents. Specifically, FAA Section 119(d), Country Analysis Requirements requires that:

> "Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of: (1) the actions necessary in that country to conserve biological diversity, and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified. (FAA, Sec. 119(d)."

This requirement is also articulated in USAID's Automated Directives System (ADS), Section 201.3.4.11.b on, mandatory environmental analysis for strategic plans. The ADS regulations also indicate that while not required, an Operating Unit "can save time and be more efficient by including all aspects of environment when undertaking the mandatory biodiversity and tropical forestry work." For example, these environmental aspects may include topics such as water resources, urban environmental issues and private sector concerns.

C. USAID's Program in Bulgaria

Environment: Although USAID/Bulgaria does not have a Strategic Objective related to the environment; it has had a significant portfolio of important environmental programs in both the natural resource and energy sectors. During the past decade, the majority of these programs were managed out of the Europe and Eurasia Bureau's Office of Energy, Environment and Social Transition (EE/EEST) in Washington. Many of these programs have ended, are phasing out or are being transferred to the Mission for management by USAID/Bulgaria. USAID/Bulgaria administers environmental activities under Strategic Objective 4.2, "Special Initiatives." These activities support the primary Mission objectives of economic restructuring and democratic transition.

USAID/Bulgaria has had a long programmatic history supporting biological diversity in Bulgaria. For the last decade, USAID has been the primary bilateral donor directly supporting biodiversity protection. With USAID support, Bulgaria became the first country to develop a National Biodiversity Conservation Strategy (NBCS) after the country signed the Biodiversity Convention at the Rio Convention in 1992. USAID supported the development of the National Biodiversity Conservation Strategy (NBCS) through the Biodiversity Support Program (BSP)[1] beginning in 1992. One of the most notable aspects of the NBCS was its high level of participation. More than 75 Bulgarian scientists, government officials, and NGO representatives convened to describe Bulgaria's biodiversity resources and to define conservation visions, goals and priority actions.

Two major USAID projects emerged based on the NBCS framework. From 1995-2000, the Bulgaria Global Environment Facility Biodiversity project (or "GEF" project)[2] was designed to strengthen the GoB's management capacity for biodiversity at the national and local levels. The GEF Project provided support to the newly-organized Ministry of Environment and Waters (MoEW) to develop legal frameworks and administrative units at Bulgaria's two most important National Parks: Rila and Central Balkan. Support resulted in the development of legal frameworks, park management plans, fully staffed and equipped Park Directorates, partnerships between parks and outside organizations and increased public awareness.

In 2000, USAID designed the Biodiversity Conservation and Economic Growth (BCEG) project as a follow up activity designed to build upon the results under GEF and to ensure institutional changes were sustainable. This project, which includes completion of management plans for two national parks Rila and Central Balkan, a management plan for Rila Monastery Nature Park, development of financial mechanisms and revenue capture pilot projects, is the subject of a Memorandum of Understanding (MOU) with the Government of Bulgaria MoEW. BCEG was also designed to introduce new concepts of sustainable eco-enterprise development in communities surrounding the parks, which would be consistent with Bulgaria's conservation

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[1] The Biodiversity Support Program is a USAID-supported consortium of the World Wildlife Fund, The Nature Conservancy and the World Resources Institute.

2 The Global Environment Facility (GEF) was created in late 1990 to provide financial resources to address global environmental issues. The GEF has received funds through parallel and co-financing arrangements and contributions to the core fund. The Bulgaria GEF Biodiversity project represents part of the US contribution of parallel-financed USAID projects to the GEF during its initial three-year pilot phase.

goals, while providing needed economic opportunity to these disadvantaged populations. The project is facilitating the development of operational models for eco-tourism and non-timber forest products implemented cooperatively between interested private stakeholders (local tour operators, hotels, craftspeople) and the park administrations. In addition, the project is currently providing technical assistance to the parks in implementing their approved management plans and public awareness and outreach strategies.

Energy Efficiency: In addition to its support in the biodiversity area, USAID has been assisting Bulgaria in the environmental sector since 1991, in the areas of environmental policy and planning, cleaner production and efficient energy use. Through regional efforts, USAID has provided support to the US Environmental Protection Agency (EPA) for training and demonstration activities on environmental policy and regulation, air quality and solid waste management. Bulgaria has been among the two top countries to benefit from the EEST/ENR ECOLINKS program, a regional initiative supported by USAID which promotes regional and US partnerships in the area of environmental technology, in coordination with the US Foreign Commercial Service. Since June 2000, Bulgarian entities have been awarded 15 challenge grants with average funding levels at $45-50,000/each to support activities related to municipal energy, energy efficiency, waste minimization and cleaner transportation.

Economic Restructuring and Growth: Another regional program in which Bulgaria is a participant is the "Regional Infrastructure Program for Water and Transport (RIP). RIP is an initiative under the Stability Pact between the Balkan nations, the United States and the European Union to support economic renewal, democracy and security in the region. The objective of USAID's technical assistance under RIP is to facilitate infrastructure projects related to water and transport services by assisting with project preparation, project procurement, leveraging donor financing and legal/regulatory frameworks. In Bulgaria, USAID has been supporting financial feasibility studies and advising on proposals for road projects planned by the Bulgaria's Road Executive Agency, which will be considered by the European Investment Bank.

USAID's private enterprise and local government initiatives offer possible opportunities for synergy with environment or biodiversity activities. In the private enterprise area, the Firm Level Assistance Group (FLAG Consortium)[3] offers a variety of programs and services to small and medium-sized enterprises in the area of agribusiness and tourism, among others. FLAG services include technical assistance, business plan development and US-based training.

Local Governance: USAID's Local Governance Initiative (LGI) seeks to strengthen local governance by working at two levels: a) at the policy level, catalyzing legislative changes for fiscal decentralization and b) at the municipal level to strengthen effectiveness. At the municipal level, LGI has established municipal associations throughout Bulgaria whose purpose is to strengthen communities through participatory problem identification and decision-making, and as a venue of support for improving service delivery. Examples of environmental integration include helping the Association of Danube River Municipalities to address structural failure

[3] FLAG is a consortium consisting of ACDI/VOCA, the International Executive Service Corps (IESC), Land O' Lakes (LOL), MBA Enterprise Corps., Entrepreneurial Management and Executive Development (EMED), and the University of Delaware.

along the river bank and assisting Black Sea communities to integrate environmental issues into sustainable development planning.

D. Statement of Work

The Assessment Team shall perform the following activities:

A) Biodiversity:

1. Conduct an overview and general analysis of Bulgaria's biodiversity conservation efforts and their current status. The team will:

a. Work as part of a team, under a USAID team leader, to evaluate biodiversity concerns in Bulgaria. The focus of all activities taken under this assignment r is the identification of actions necessary to conserve biodiversity and to ensure that actions proposed in the Bulgaria Strategic Plan meet the biodiversity needs thus identified.

b. Prior to departure, the team shall hold meetings with the Bureau Environmental Officer and E&E Bureau Technical Staff to gather relevant information on regional programs and agency environmental regulations. In addition, meetings shall also be held with the USDA/Forest Service international program and/or any other government or non-government organizations suggested by USAID/Sofia.

c. Meet with USAID/Bulgaria to get an understanding of the Mission's ongoing sectoral assessments, program goals and objectives under its new strategy. The Mission may also provide the team with advice and protocol on approaching USAID partners and host country organizations with respect to this assignment. The team shall be aware of sensitivities related to an assessment exercise (i.e. the potential for raising expectations, and the need to be clear as to the purpose of the assessment) and respect Mission guidance. The team will discuss organizations to be contacted and any planned site visits with the Mission and coordinate as required.

d. The USAID Environment Officer will facilitate meetings with other S.O. Teams at USAID to allow the team to gain a full understanding of the country program and strategy. USAID/Sofia will be conducting other assessments, including one on agriculture. Coordination/communication between the assessment teams, as possible, would benefit the overall strategic planning process. The USAID Environmental Officer will help facilitate interaction and information exchange as necessary.

e. Obtain, review and analyze existing documentation on biodiversity conservation in Bulgaria such as that prepared by government agencies, bilateral donors, and national and international NGOs. Examples of such documentation may include National Environmental Action Plan (NEAP); National Biodiversity Conservation Strategy; Global Environment Fund (GEF) project reports; UNESCO Biosphere projects; World Wildlife Fund reports; etc., as available.

f. Hold meetings with relevant GoB ministries and agencies, donor organizations, NGOs, and other organizations who are knowledgeable about biodiversity conservation, cross cutting issues, or implementing noteworthy projects, and gather relevant information.

g. If necessary, conduct one to three priority site visits to supplement understanding of interviews, literature and current environmental infrastructure.

2. Assess and summarize the needs for biodiversity conservation in Bulgaria based on key threats and analysis of country donor and NGO responses to meet these needs. Prepare a report on the status of biodiversity conservation efforts in Bulgaria and implications for USAID or other donor programming and environmental monitoring which shall define the actions necessary for conservation..

   At a minimum, this report shall 1) clearly articulate the actions necessary to conserve biodiversity in Bulgaria, and 2) define the extent to which actions proposed in the Strategic Plan for Bulgaria meet the biodiversity conservation needs identified. The report shall include:

- ***A general overview of major ecosystem types, highlighting important or unique aspects of the country's biodiversity, including important endemic species and their habitats; Important references which detail this information should be documented.***

- A general summary of natural areas of particular importance to biodiversity conservation, such as forests, wetlands, coastal areas critical for species reproduction, feeding or migration, if relevant by type and size, relative to overall resources by type. Important existing documents which detail this information should be referenced.

- Plant and animal species which are endangered or threatened with extinction. Endangered species of particular social, economic or environmental importance should be briefly highlighted and described, as should their habitats. An updated list, such as the IUCN red list should be included as an annex;

- An assessment of framework laws for biodiversity conservation and national policies and strategies. This should include the status of financing for conservation, the status of country participation in major international treaties, the country's protected area system, and monitoring systems.

- A general assessment of threats to biodiversity from natural disaster or catastrophic events such as forest fires, their role in the environment and institutional response.

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- Current and potential future *primary* threats to biodiversity whether they are ecological (i.e. climate change, fire, pests, floods), related to human use (i.e. agriculture, industrial contamination, legal/illegal deforestation, siltation), or institutional (i.e. failed policy, forest restitution, environmental regulation/enforcement) or trans-boundary issues as appropriate.

- An overview of conservation efforts in Bulgaria including their scope and effectiveness. This should include a general assessment of institutional capacity of the various government and non-government organizations involved in conservation and the relative effectiveness of their interventions (policies or programs) as well as those funded by international donors. Priority conservation needs which lack donor or local support should be highlighted. Specific donor and multi-donor projects to be considered in Bulgaria include:

    - Bulgaria/Swiss efforts to develop a management plan for Pirin National Park;
    - Danish EPA contributions to Bulgaria's protected areas network;
    - United Nations Development Programme (UNDP) and GEF initiative in Rhodope Mountains;
    - Regional Environmental Center (REC) efforts in Bulgaria and the region
    - World Bank supported wetlands project

- An assessment of how USAID/Sofia's overall program and proposed country strategy meets the needs for biodiversity conservation. This shall include not only the Mission environmental activities, but also those activities of the other strategic objectives.

- Recommendations of how the proposed country strategic plan could better integrate environmental and biodiversity concerns, if relevant. This could include any potential opportunities for USAID to support biodiversity conservation or related environmental activities that are consistent with Mission program goals and objectives. Particular attention should be paid to cross-sectoral linkages with local governance and the private sector objectives of the Mission. Key cross-sectoral topics for analysis include:

    - USAID/Bulgaria's Economic Restructuring and Growth programs such as promotion of small and medium enterprises (SMEs),

    - Parallel programs in promoting energy efficiency via the Mission's Development Credit Authority (DCA) and the aforementioned regional Ecolinks program;

    - Local and municipal governance support projects related to municipal waste and water issues and other infrastructure and energy programs;

    - Evaluation of environmental-oriented Intermediate Support Organizations (ISOs) within the Mission's Democracy and Local Governance sector;

    - Opportunities for the Mission's agriculture-related programs to contribute to biodiversity conservation requirements, such as corroboration of USAID agriculture programs and USAID's biodiversity conservation requirements with USDA Foreign Agriculture Service projects.

    - Impact of SAPARD projects with respect to the agriculture and biodiversity conservation;

- Overview of European Union (EU) accession promotion efforts and projects and what they portend for existing and planned biodiversity conservation efforts (i.e. expansion of highways and environmental impacts; closure or refurbishment of Kozluduy nuclear plant and prospects for new nuclear and other energy projects, pipelines, etc.);

- Potential synergy with public education efforts under joint USAID/UNDP "Chitalishte" information clearinghouse project and telecenters projects.

E. Methodology:

EEST/ENR will field a team for this assignment, which will work with USAID/Bulgaria's Environmental Officer, Jay Lee and the Mission Program office, as follows:

Alicia Grimes, Senior Natural Resources Management Specialist, EE/EEST/ENR
Gregory Myers, Natural resource Management specialist, EE/EEST/ENR
Jeff Ploetz, Biodiversity Specialist, (contractor) DevTech Systems

F. Deliverables:

The primary deliverable under this task order is an Assessment Report for USAID/Bulgaria, which examines the biodiversity/natural resources and environmental issues and identifies issues and opportunities for USAID/Bulgaria.

Three hard copies and one electronic copy of a draft report, in English, are due to USAID/Bulgaria and E&E/ENR offices, for comment, prior to departure. The final report, in English, is due to USAID/Bulgaria and E&E/ENR offices no later than _____. Two hard copies and one electronic copy of this assessment, in Microsoft Word format, shall be provided to the USAID/Bulgaria Program Office as well as to the E&E Bureau Environmental Officer.

The second deliverable is an in-country Mission exit briefing to be scheduled following the submittal of the draft report.

G. Reporting Requirements

III. Anticipated Level of Effort (LOE), Schedule and Payment:

The LOE for this assignment is a total of ____ person-days as follows:

- Information gathering, field assessment, analysis, meetings with relevant counterparts, GoB, donor, and NGO representatives and Mission debriefing (_____ person-days)
- Report Preparation (including incorporating USAID comments (_____ person-days)

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Schedule: (TBD) EEST/ENR will field a team o/a _____. The team will be composed of the following technical officers:

Logistics:

The team will coordinate logistics with the USAID/Bulgaria Environment Officer. Mission will assist the team by providing key references and contacts as well as logistical support where necessary (i.e.translators, drivers, computers).

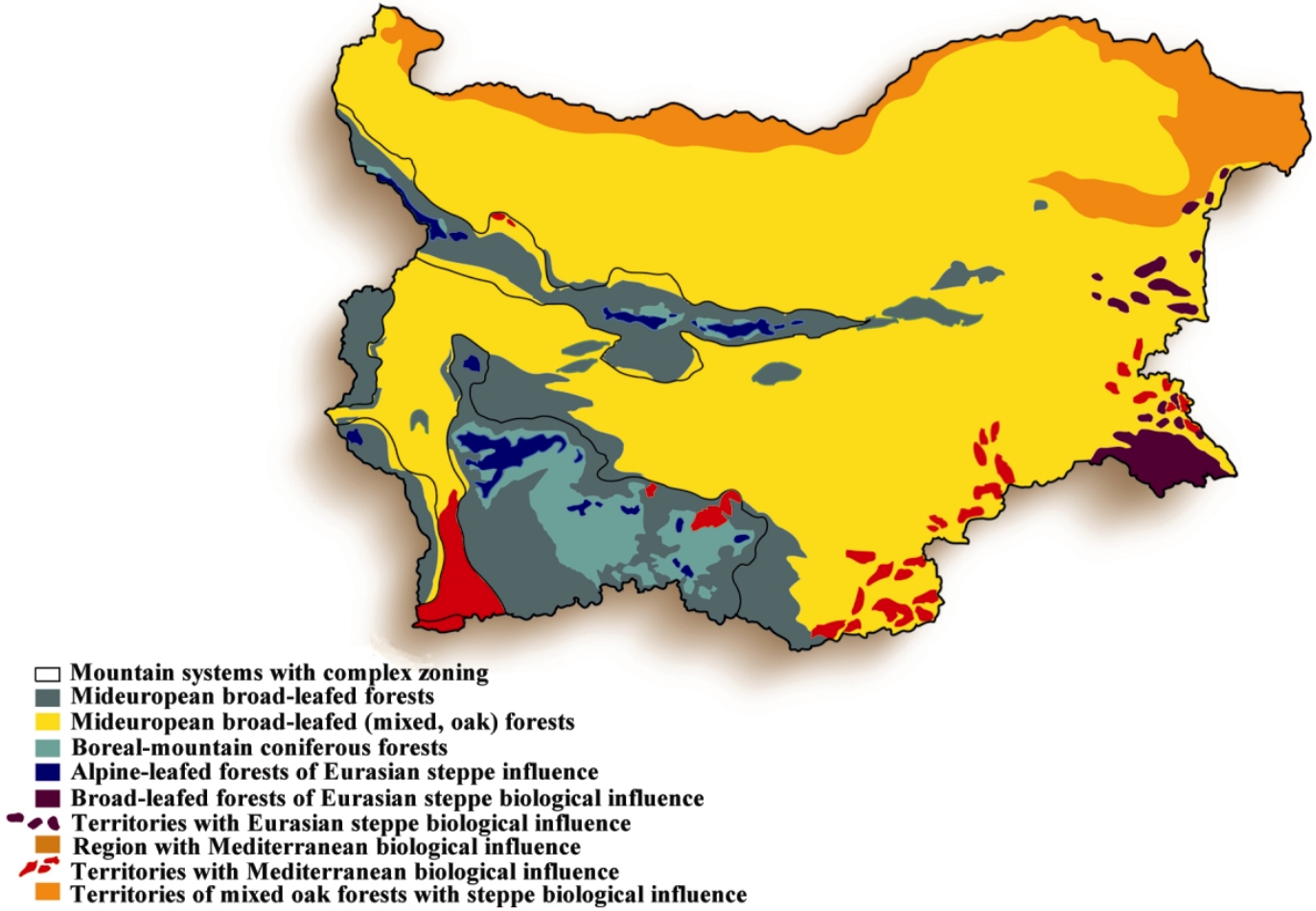
USAID/Bulgaria's Program Office will also help facilitate meetings with other Mission SO Team Leaders or their staff to fully brief the team on USAID's program and future vision for their strategy.

ANNEX B

Biodiversity Related Maps of Bulgaria

Annex B, Figure 1

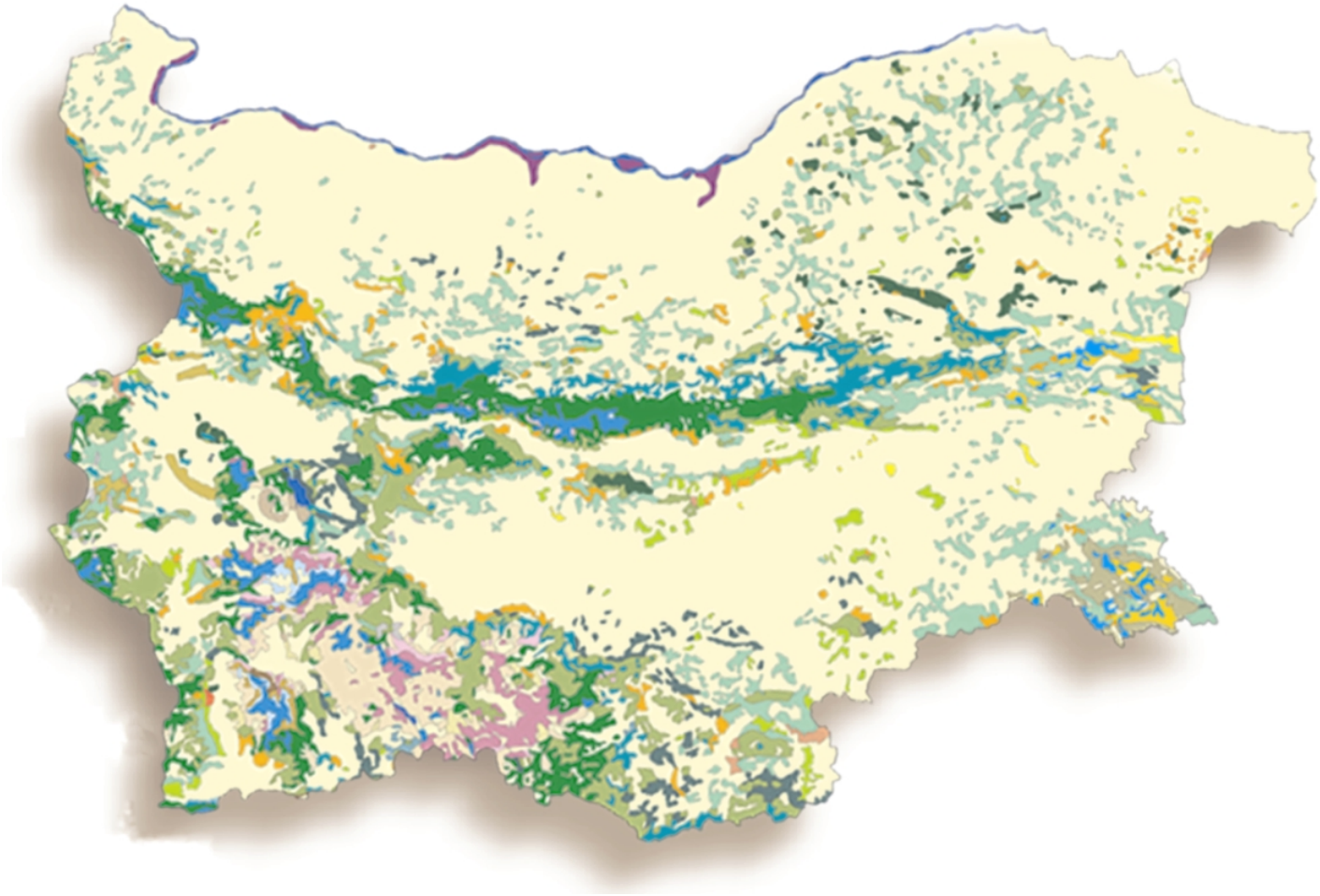
Map of Biome and Biotic Diversity in Bulgaria



Adapted from Aladzhem, 2000

ANNEX B, Figure 2

Map of Forest Ecosystems in Bulgaria



*see key on next page
Adapted from Aladzhem, 2ooo

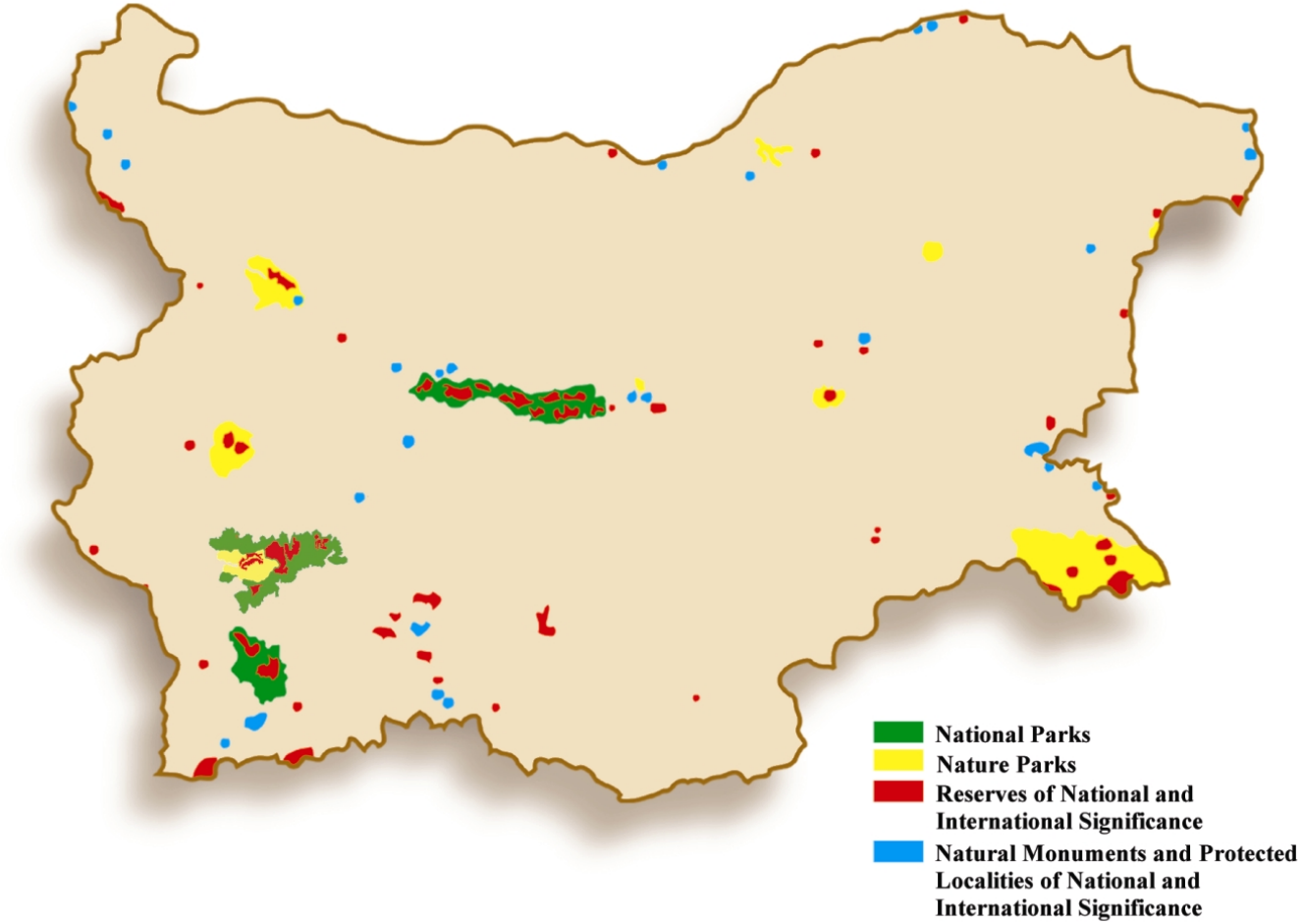
Key: Map of Forest Ecosystems in Bulgaria

Forest Ecosystems Key

- *Pinus mugo* forests
- Norway spruce forests
- Silver fir forests, pure and mixed with beech, Norway spruce and Scots pine
- *Pinus peuce* forests, pure and mixed with Scots pine and Norway spruce
- Scots pine forests, pure and mixed with Norway spruce, silver fir and beech
- Beech forests, pure and mixed with sycamore and other broad-leafed species
- Aspen, birch, alder and other broad-leafed species forests
- Artificial (planted) forests of Scots pine
- *Pinus heldreichii* forests, pure and mixed with Austrian Pine
- *Fagus moesiaca* forests, pure and mixed with hornbeam and other species
- Sweet chestnut forests mixed with beech, *Quercus deleshampii, Quercus frainetto,* and other species
- *Quercus daleshampii* forests, pure and mixed with hornbeam, *Tilia spp., Ostriya carpinifolia, Carpinus orientalis,* and other species
- Austrian pine forests, pure and mixed with *Quercus deleshampii*
- Artifical (planted) forests of Austian pine
- *Fagus orientalis* forests mixed with *Quercus polycarpa,* hornbeam, *Tilia spp.,* and other species
- *Quercus polycarpa* forests mixed with *Tilia spp.*
- Mixed forests of *Quercus polycarpa* and *Quercus frainetto*
- *Quercus ceris* forests mixed with *Quercus frainetto, Quecus virgiliana, Quercus pubescens, Carpinus orientalis,* and other species
- *Quercus frainetto* forests mixed with *Quercus pubescens, Carpinus orientalis,* and other species
- Mixed forests of *Quercus pubescens, Quercus virgiliana,Carpinus orientalis,* and other species
- Mixed forests of *Fraxinus ornus, Acer mosspesilanum, Carpinus orientalis,* and other species
- Forests and shrub lands of *Juniperus excelsa*
- Forests and shrub lands of *Carpinus orientalis*
- *Quercus robur* forests
- *Populus spp.* forests
- Agricultral and other non-forested areas
- Bodies of water
- *Juniperus sibirica* shrub lands
- Shrub lands and grass formations
- Hornbeam forests mixed with *Acer, Tilia, Fraxinus,* and other species

Annex B, Figure 3

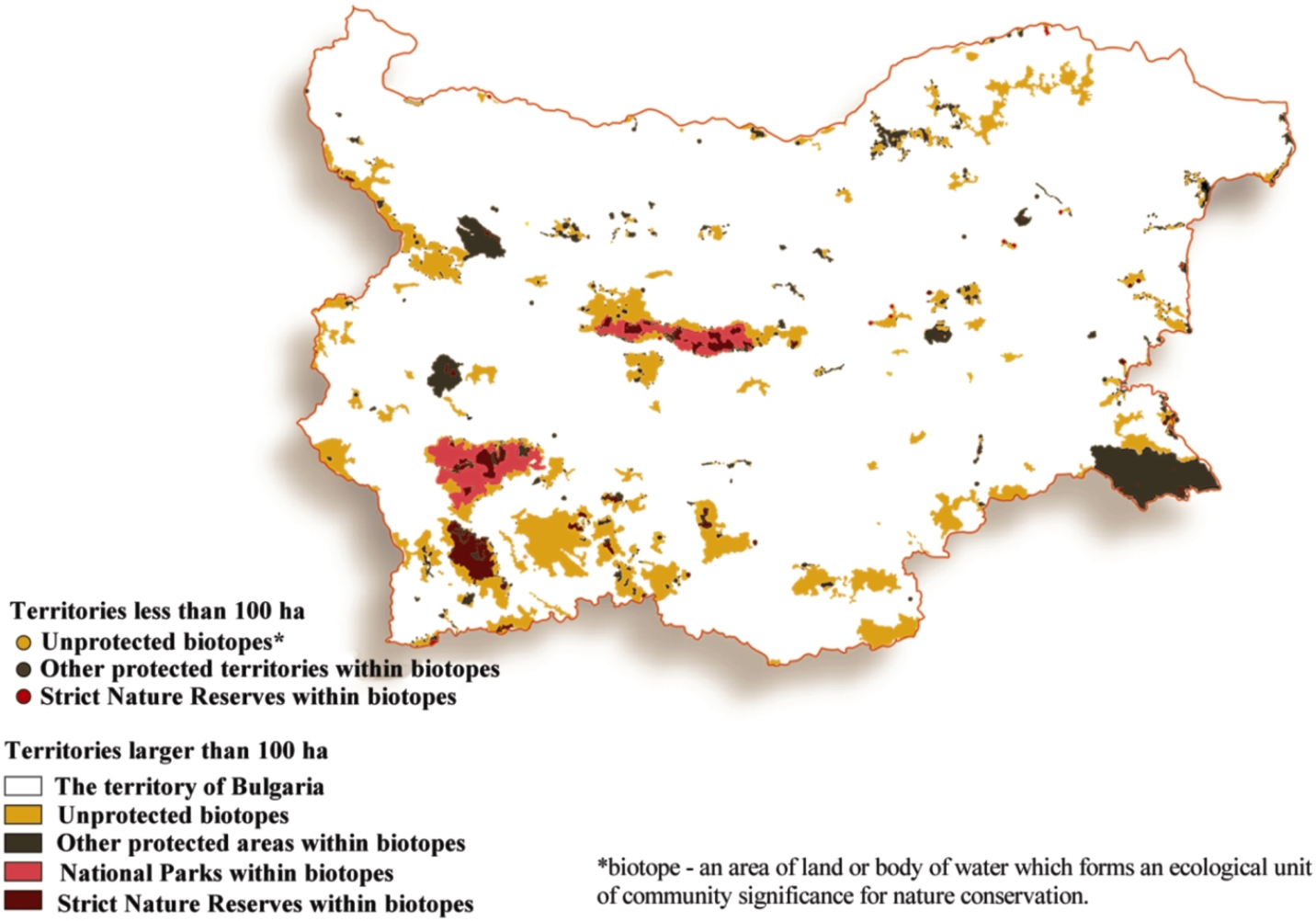
Map of the Protected Areas in Bulgaria



Adapted from Aladzhem, 2ooo

ANNEX B, Figure 4

Map of Biotopes and Territories designated in "CORINE Biotopes – Bulgaria" Project



Adapted from Aladzhem, 2ooo

Annex C

Laws and International Conventions

Annex C

Laws and International Conventions

A. ENVIRONMENTAL LAWS

Nature Protection Act (1967)
The Nature Protection Act, still in force and amended several times over the last three decades was the first significant piece of legislation establishing international legal standards for protected areas and their management. It came into affect when most lands were owned by the state and natural sites were given to the state for management and maintenance.

Protected Areas Act (1998)
The Protected Areas Act amends and supplements the Nature Protection Act of 1967, but does not repeal it. The Protected Areas Act introduces a protected area classification in line with international standards. The classification covers reserves, national parks, natural landmarks, maintained reserves, nature parks and protected sites. In addition to defining protected areas, it also stipulates their purpose, regimes of protection and use and procedures for their declaration and management. It establishes national parks (Pirin, Rila and Central Balkan) and strict reserves as exclusive property of the state. It also defines agency jurisdictions (Ministry of Environment and Waters and Ministry of Agriculture and Forests) over management of specific protected area categories.

Hunting and Game Protection Act (2000)
Defines the relationships concerning ownership, protection and management of game animals, the rights to hunt and trade in game animals and game animal products.

Medicinal Plants Act (2000)
Defines the management of the conservation and sustainable use of medicinal plants, including the purchase of herbs produced from them.

Waters Management Act (1999)
Provides the framework for ownership and management of water resources, including water complexes and dams, as well as the framework for water economics, systems and facilities.

Tourism Act (1998)
Regulates government tourism policy; and the authorities and tourist organizations, the terms and procedures for carrying out tourist activities and their control.

Waste Act (1997)
The Act regulates the obligations and responsibilities of waste generators to reduce the generation of hazardous waste materials, and establishes sanctions for violators.

Concession Act (1995)
Defines the terms and conditions for granting concessions.

B. LAND USE LAWS

The Law for Agricultural Land Ownership and Use (1991) establishes private land property rights and procedures for liquidation of (state) cooperatives, procedures for restitution of land to former (pre-communist) owners and their heirs, and the procedures for distributing non-land assets of collective farms. Significantly, the law articulates that where assets of a former collective or association could not be equally divided (e.g., tractors, barns, other infrastructure), those assets were to be sold and the receipts distributed to the former association members. As of 2001, approximately 100% of the land previously held by the state and available for restitution was restituted back to individuals and municipalities. The OECD reports that approximately 80% of all agricultural land restituted was for parcels of less than 1 hectare in size.

The Land Lease Law (1991) legalized leasehold arrangements and defined the relationship between owners (lessor) and users (lessee) of land and non-land agricultural assets. Current law does not allow foreign entities to "own" land and other natural resources. The land Lease Law permits both domestic and foreign investors to lease property for unlimited period of time. It is likely that as EU accession grows near, Bulgaria will again amend its property rights laws to allow foreign ownership of Bulgarian land and assets, in conformity with EU standards.

The Forests and Forest Fund Act (1997) revokes the Forest Act of 1968. The Forests and Forest Fund Act establishes private rights for forestland and defines state forest property rights. All forested land is transferred into the "forest fund," whether it is private or state-held. The law articulates rules for management, regeneration, use (including harvesting timber and nontimber forest products) and protection of all forests. Forests held by the state include areas defined as protected areas, national parks, nature parks and all other forests not held by legal persons or municipalities. The law states that it shall be "inadmissible to decrease the forest cover of the country below 30%." A Bulgarian National Forest Fund is established to fund management expenses.

Restoration of Ownership over the Forests and Lands from the Forest Fund Act (1997) is the corollary to the Law for Agricultural Land Ownership and Use for forested land. The law defines procedures for restoration of ownership of forests and lands within the forest fund to individuals, municipalities and other legal persons. It also defines the rights and obligations of the state and municipal authorities, and the management requirements for legal persons who own forests and lands in the forest fund. As of 2001 nearly 85% of forested land available for restitution had been restituted. Approximately 30% of forestland have been restituted to municipalities, 18% to private interests and the balance (52%) is held by the state.

C. INTERNATIONAL CONVENTIONS

Bulgaria is a signatory to the following conventions:

Convention	Adopted by Bulgaria
• International Convention For The Protection Of Birds	1950
• Convention on the Protection of the World's Cultural and Natural Heritage (World Heritage Convention, 1972)	1974
• Convention on Long-Range Transboundary Air Pollution (1979)	1983
• Convention on Wetlands of International Importance as Waterfowl Habitat (RAMSAR Convention, 1971)	1986
• Vienna Convention for Protection of the Ozone Layer (1985)	1991
• Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington Convention, 1973) (CITES)	1991
• Convention for Conservation of European Wild Life and Natural Habitats (Bern Convention, 1979)	1991
• Convention Between the Governments of Republic of Bulgaria and Romania for Cooperation in the Area of Environmental Protection (1991)	1991
• Convention on Protection and Use of Transboundary Water Courses and International Lakes (1992)	1992
• Convention on Protection of the Black Sea Against Pollution (1992)	1994
• Convention on Environmental Impact Assessment in the Transboundary Context (1991)	1995
• Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992)	1995
• Basel Convention for Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)	1995
• Framework Convention on Climate Change (1992)	1995
• Convention on Biological Diversity (1992)	1996
• Convention for the Preservation of Migrating Wild Animal Species (Bonn Convention, 1979)	1999
• Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS, 1996)	1999
• CORINE Biotopes	
• Natura 2000/Emerald	
• Pan-European Biodiversity and Landscape Conservation Strategy	
• UNESCO Man and Biosphere Program	
• Agreement on conservation of African-Eurasian migratory water birds	1999
• Agreement on conservation of bats	1999
• Convention on Cooperation for the protection and sustainable use of the Danube river	1999
• Bucharest convention for the protection of the Black Sea against pollution	
• European convention on landscape protection	

Annex D

Donor Table of Environmental Activities

Annex D

Donor Table of Environmental Activities

European Donor Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
Danish	Conservation of Species and Habitats in Bulgaria: EU Approximation implemented by DANCEE - Cooperation for Environment in Eastern Europe	6, 9, 10, 15	DANCEE will assist Bulgaria to protect natural habitats and species of wild flora and fauna of National and European interest in areas designated for biodiversity conservation by establishing a Natura 2000 Network of Protected areas. The project will also assist in the development of a national GIS database on species and habitats; prepare draft legal declarations for designating Natura 2000 sites, and prepare documentation for standing committee Bern Convention and EC. The project will also build capacity in nature protection by enhancing regional and local participation in preparing monitoring programs and management plans. Other potential areas of activity include Coastal Zone Management and wetland restoration along the Black Sea, environmental education in primary and secondary schools, NGO and civil society environmental information services, organic farming pilot projects, owner based land restitution/land use regulation pilot project on sensitive land, and a sustainable forestry program.
EU	PHARE	4	Phare focuses on a wide range of activities, including development of new legislation (including adoption of the 'acquis communautaire,' which is the EU's body of legislation), and support to administrative structures, governance, and the environment. (See text for further discussion.)
EU	SAPARD	6	The SAPARD program supports the efforts made by EU candidate countries in the pre-accession period as they prepare for their participation in the Common Agricultural Policy and the single market of the European Union. The objective is to provide financing for a wide range of measures for structural adjustment of agriculture and rural development as part of the accession strategy of the candidate countries. (See text for further discussion.)

European Donor Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
EU	Regional Infrastructure Project (RIP)	4	Improvement of transport corridors, waste water treatment facilities and water delivery systems
Netherlands	Joint Implementation Unit	7	The Joint Implementation Unit in Bulgaria was created in accordance with Kyoto Protocol to address greenhouse gas emission reduction. The main task of the Unit is to evaluate the project proposals and prepare recommendations to the Ministry of Environment and Waters of Bulgaria.
Swiss	Bulgarian - Swiss Biodiversity Conservation Program (BSBCP)	7	The main goal of the BSBCP is to conserve biodiversity and support protected areas in 5 priority geographical regions (Central Balkan, Dobrudja, Bourgas Wetlands, Strandja, Eastern Rhodopes). A sub-project "Pirin National park" will support the MoEW to develop a management plan for the park.
Swiss	Bulgarian - Swiss Forestry Program	6	The forestry program includes sustainable forestry practices, planning, and support for policy and legal reform.
Swiss	Development of Sustainable Agriculture in the Region of Central Balkan Range	1, 18	The project will promote farming efficiency and sustainable bio-agriculture.
Swiss	National Trust Eco Fund	4	Management of funds provided under debt-for-nature and debt-for environment swaps, as well as funds provided under other types of agreements with international, foreign, or Bulgarian sources aimed at environmental protection in the Republic of Bulgaria. Priority areas are: pollution clean up, air pollution reduction, clean water protection, and biodiversity protection.

European Donor Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
Swiss	Waste Waters Treatment Plant Plovdiv	4	Renovation and expansion of Plovdiv's waste water treatment plant.
WWF/Austria	Danube-Carpathian Programme	6, 7, 11, 12	The project is focused on protection and restoration of wetlands along the Danube flood plain as well as protection and restoration of the "Danube Islands." The project also focuses on civic education and the development of a transboundary “Green Corridor” with Romania.

Global Environment Facility Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
UNDP	Energy Efficiency Strategy	7	Targeted at overcoming barriers to increased energy efficiency and the associated reduction in GHG emissions through national capacity building, supporting demonstration projects, and project management.
WB - GEF	Danube/Black Sea Basin Strategic Partnership on Nutrient Reduction (Phase I) - Bulgaria Wetlands Restoration and Pollution Reduction Project	7	Improve water quality and decrease nutrient loads, and to conserve biodiversity in the Danube River and Black Sea basins.

Global Environment Facility Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
EBRD	Danube Pollution Reduction Program	4	This program supports financing pollution reduction projects by local financial institutions. Within the framework of the GEF/UNDP/EU Danube Pollution Reduction Program, a number of projects address trans-boundary causes of environmental degradation to the watershed.
UNDP, UNEP, WB	Nutrient Reduction Program - Regional Project for the Danube Basin	4	The project assists in restoration and protection of the Black Sea.
UNDP	Clearing House Mechanism (CHM)	10	Technical support to establish a functional and operational network on which the Bulgaria CHM is to be based.
UNDP	Biodiversity Enabling Activity	7	This project will assist the GOB to meet its obligations under the Convention on Biological Diversity. It consists of more than 100 activities to be implemented by different ministries in the next five years, including the "Conservation and Sustainable Use of Mountain Ecosystems within and around Three Bulgarian National Parks" project with the Ministry of Environment and other stakeholders.
UNDP Swiss	Conservation of Globally Significant Biodiversity in the Wider Environment of Bulgaria's Rhodope Mountains	6, 7	The objective of the project is to conserve globally significant biodiversity of the Rhodope Mountains in southeast Bulgaria.

World Bank Projects			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
World Bank	Second Agriculture Sector Adjustment Loan (ASAL II)	6, 8	ASAL II seeks to support broad-based rural growth. It will provide a framework conducive to market-driven structural changes.
World Bank	Environmental Remediation Pilot Project	3, 7, 8	Main objectives: 1) Reducing environmental hazards caused by past pollution at the MDK Copper Smelter (MDK). 2) Facilitating improvements in the environmental performance of the plant. 3) Facilitating the privatization of MDK by reducing uncertainties and concerns of strategic investors about environmental liability issues.
World Bank	Environment and Privatization Support Adjustment Loan	3, 7, 8	The project will support privatization of highly polluted enterprises by reforming environmental legislation, establishing a framework for integrating environmental legislation, establishing a framework for integrating environmental issues into privatization, and accelerating the harmonization of national laws with EU environmental requirements and practices.
World Bank	Water Company Restructuring and Modernization	9	The activity will increase corporate autonomy and commercial orientation of water companies and make their management accountable to local authorities. It will also improve health and environmental conditions in urban areas; increase regional water companies operating efficiency and cost recovery; and demonstrate the feasibility and benefits of transparent procurement procedures, efficient contract management, and competition for supply of goods, works and services.
World Bank	District Heating Pilot Project	16	Designed to provide essential information on consumption of district heat. The information will be used for: to design comprehensive system rehabilitation projects to be funded by ERBD, PHARE, and possibly the WB; improve systems operations; provide incentives for reduced heat consumption; improve billing structure; and improve the financial performance of the district heating companies.

US Agency Support			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
USAID/Sofia	BCEG	6	Assist the National Park Departments in their ability to properly manage supported parks, conduct pilot programs on ecotourism and non-timber forest product use, and promote protected areas utilizing the local and national media.
USAID/Sofia	Democracy Network Program (DemNet)	17	Formation and support for effective partnerships among NGO's, government and the private sector; identification of NGO constituencies and stakeholders needs. Through the project, TIME, DemNet supports NGO projects in a broad range of environmental areas, including resource mobilization, information sharing through the NGO information network, as well as lobbying and advocacy activities directed at policy reform. DemNet activities are implemented by partner organizations including the Bulgarian Charity Aid Foundation (BCAF) and the Open Society Club (OSC). Environmental focused activities include:
		DemNet Partner	**Area/Program Specifics**
		BCAF	Marketing and Aestheticism of a cycling alley
		BCAF	Construction of a green zone
		BCAF	Ecotourism Stimulation
		BCAF	Conservation of Cinerous Vulture
		BCAF	Civil Access to Environmental Information
		BCAF	Environmental Culture Education of Youth
		OSC	Pollution Education project from the Beli Lom River
		OSC	Village and Health
		OSC	Dobrich River Clean-up / Roma involvement
		OSC	Environmental Education in the school

US Agency Support			
Donor(s)	**Project**	**Bulgarian Partner**	**Project Objectives/Purpose**
USAID / Washington	EcoLinks	11, 13	Promoting sustainable relationships between businesses, local governments, and associations in Central and Eastern Europe and Eurasia with their US counterparts and thereby helping solve urban and industrial environmental problems in the region. Approximately 30 projects/partnerships in Bulgaria have resulted from this program.
USAID / USFS	Fire Management	2	Assisting Bulgaria with training and equipment to increase fire-fighting capability.
US EPA	LEAP	7, 14, 15	Development of LEAP guidelines for Bulgaria, trainings for all municipalities of the country and regional environmental inspectors, and two demonstration projects implementing LEAPs.
US Peace Corps	Environmental Volunteers	19	32 "ecolog" volunteers are working throughout Bulgaria with a variety of organizations from Park Directorates (both National and Nature), NGO's, Schools, and Municipalities. Activities range from environmental education to biodiversity conservation.

Bulgarian Partner Key:

1. BioSelena – Foundation for Organic Agriculture
2. Bulgarian Agency for Civil Protection
3. Bulgarian Privatization Agency
4. Government of Bulgaria
5. Local Authorities
6. Ministry of Agriculture and Forestry
7. Ministry of Environment and Waters - MoEW
8. Ministry of Finance
9. Ministry of Regional Development and Public Works
10. MoEW - National Nature Protection Service
11. Municipal Government
12. Non-Governmental Organization
13. Private Sector
14. Regional Environmental Center
15. Regional Environmental Inspectorate
16. State Agency for Energy and Energy Resources
17. This is My Environment Foundation - TIME
18. University of Plovdiv
19. Various

ANNEX E

List of Endangered Species: IUCN Red List for Bulgaria

ANNEX E

List of Endangered Species: IUCN Red List for Bulgaria

#	[Scientific Name]	Common Name(s)	Red List
1	Acipenser gueldenstaedtii (Caspian Sea stock)	RUSSIAN STURGEON (E)	EN A2d
2	Acipenser gueldenstaedtii	RUSSIAN STURGEON (E)	EN A2d
3	Acipenser nudiventris	BASTARD STURGEON (E) FRINGEBARBEL STURGEON (E) SHIP STURGEON (E) SPINY STURGEON (E) THORN STURGEON (E) ESTURGEON À BARBILLONS FRANGÉS (F) ESTURIÓN BARBA DE FLECOS (S)	EN A1acde+2d
4	Acipenser ruthenus	STERLET (E)	VU A1c+2d
5	Acipenser stellatus	STAR STURGEON (E) STELLATE STURGEON (E) ESTURGEON ÉTOILÉ (F) ESTURIÓN ESTRELLADO (S)	EN A2d
6	Acipenser sturio	BALTIC STURGEON (E) COMMON STURGEON (E) ESTURGEON COMMUN (F) ESTURIÓN COMÚN (S)	CR A2d
7	Acrocephalus paludicola	AQUATIC WARBLER (E)	VU A1c+2c
8	Aegypius monachus	BLACK VULTURE (E) CINEREOUS VULTURE (E) VAUTOUR MOINE (F) BUITRE NEGRO (S)	LR/nt
9	Alosa alosa	ALLIS SHAD (E)	DD
10	Alosa fallax	TWAIT SHAD (E) TWAITE SHAD (E)	DD
11	Alosa maeotica		DD
12	Alosa pontica		DD
13	Anser erythropus	LESSER WHITE-FRONTED GOOSE (E) OIE NAINE (F)	VU A1acd+2bcd
14	Aquila clanga	GREATER SPOTTED EAGLE (E) SPOTTED EAGLE (E) AIGLE CRIARD (F) AGUILA MOTEADA (S)	VU C1
15	Aquila heliaca	IMPERIAL EAGLE (E) AIGLE IMPÉRIAL (F) AGUILA IMPERIAL ORIENTAL (S) AGUILA IMPERIAL (S)	VU C1

#	[Scientific Name]	Common Name(s)	Red List
16	Archon apollinaris		LR/nt
17	Aspius aspius	ASP (E)	DD
18	Astacus astacus	NOBLE CRAYFISH (E)	VU B2bce+3bcd
19	Atherina boyeri		DD
20	Aythya nyroca	FERRUGINOUS DUCK (E) FERRUGINOUS POCHARD (E) WHITE-EYED POCHARD (E) FULIGULE NYROCA (F) PORRÓN PARDO (S)	LR/nt
21	Barbastella barbastellus	WESTERN BARBASTELLE (E)	VU A2c
22	Barbatula bureschi		DD
23	Barbus cyclolepis		DD
24	Benthophiloides brauneri		DD
25	Bombina bombina	EUROPEAN FIRE-BELLIED TOAD (E)	LR/cd
26	Branta ruficollis	RED-BREASTED GOOSE (E) BERNACHE À COU ROUX (F) BARNACLA CUELLIRROJA (S)	VU B1+2c
27	Carabus intricatus	BLUE GROUND BEETLE (E)	LR/nt
28	Carassius carassius (European subpopulation)	CRUCIAN CARP (E)	LR/nt
29	Chalcalburnus chalcoides	DANUBE BLEAK (E)	DD
30	Chionomys nivalis	SNOW VOLE (E)	LR/nt
31	Clupeonella cultriventris		DD
32	Cobitis elongata	BALKAN LOACH (E)	DD
33	Cobitis strumicae		DD
34	Coenagrion mercuriale	SOUTHERN DAMSELFLY (E)	VU A2c
35	Coregonus albula	VENDACE (E) WHITE FISH (E)	DD
36	Coregonus lavaretus	LAVARET (E)	DD
37	Coregonus peled	NORTHERN WHITEFISH (E)	DD
38	Crex crex	CORN CRAKE (E) CORNCRAKE (E) RÂLE DES GENÊTS (F)	VU A2c
39	Cricetulus migratorius	GREY HAMSTER (E)	LR/nt
40	Cyprinus carpio (River Danube subpopulation)	WILD COMMON CARP (E)	CR A2ce
41	Cyprinus carpio	WILD COMMON CARP (E)	DD
42	Dryomys nitedula	FOREST DORMOUSE (E)	LR/nt
43	Elaphe situla	LEOPARD SNAKE (E)	DD
44	Emys orbicularis	EUROPEAN POND TURTLE (E) CISTUDE D'EUROPE (F)	LR/nt
45	Eriogaster catax		DD
46	Eudontomyzon danfordi	CARPATHIAN BROOK LAMPREY (E)	LR/nt

#	[Scientific Name]	Common Name(s)	Red List
47	Eudontomyzon mariae	UKRANIAN BROOK LAMPREY (E)	DD
48	Eudontomyzon vladykovi	VLADYKOV'S LAMPREY (E)	LR/nt
49	Falco naumanni	LESSER KESTREL (E) FAUCON CRÉCERELLETTE (F) CERNÍCALO PRIMILLA (S)	VU A1bce+2bce
50	Formica aquilonia		LR/nt
51	Formica lugubris		LR/nt
52	Formica polyctena	EUROPEAN RED WOOD ANT (E)	LR/nt
53	Formica pratensis var. nigricans	EUROPEAN RED WOOD ANT (E)	LR/nt
54	Formica rufa	RED WOOD ANT (E)	LR/nt
55	Glis glis	FAT DORMOUSE (E)	LR/nt
56	Gobio albipinnatus	WHITE-FINNED GUDGEON (E)	DD
57	Gobio kessleri	KESSLER'S GUDGEON (E)	DD
58	Gobio uranoscopus	DANUBE GUDGEON (E)	DD
59	Gymnocephalus baloni	BALON'S RUFFE (E)	DD
60	Gymnocephalus schraetzer	SCHRAETZER (E) STRIPED RUFFE (E)	VU A1ace
61	Haliaeetus albicilla	GREY SEA EAGLE (E) WHITE-TAILED EAGLE (E) PYGARGUE COMMUN (F) PYGARGUE À QUEUE BLANCHE (F) PIGARGO COLIBLANCO DE GROENLANDIA (S) PIGARGO COLIBLANCO (S) PIGARGO EUROPEO (S)	LR/nt
62	Hirudo medicinalis	MEDICINAL LEECH (E) SANGSUE MÉDICINALE (F) SANGSUE OFFICINALE (F)	LR/nt
63	Hucho hucho	DANUBE SALMON (E) HUCHEN (E)	EN A2bcde, B1+2bce
64	Huso huso	BELUGA (E, F, S) EUROPEAN STURGEON (E) GIANT STURGEON (E) GREAT STURGEON (E)	EN A2d
65	Hyla arborea	EUROPEAN COMMON TREE FROG (E) EUROPEAN TREE FROG (E) RAINETTE VERTE (F)	LR/nt
66	Lampetra planeri	BROOK LAMPREY (E)	LR/nt
67	Leuciscus borysthenicus	BLACK SEA CHUB (E)	DD

#	[Scientific Name]	Common Name(s)	Red List
68	Lutra lutra	COMMON OTTER (E) EURASIAN OTTER (E) EUROPEAN RIVER OTTER (E) OLD WORLD OTTER (E) LOUTRE COMMUNE (F) LOUTRE D'EUROPE (F) LOUTRE DE RIVIÈRE (F) NUTRIA COMÚN (S)	VU A2cde
69	Lycaena dispar	LARGE COPPER (E)	LR/nt
70	Lycaena ottomanus		VU A1ac
71	Maculinea alcon	ALCON LARGE BLUE (E)	LR/nt
72	Maculinea arion	LARGE BLUE (E)	LR/nt
73	Maculinea nausithous	DUSKY LARGE BLUE (E)	LR/nt
74	Maculinea rebeli		VU A1ac
75	Mesocricetus newtoni	ROMANIAN HAMSTER (E)	VU D2
76	Mesogobius batrachocephalus		DD
77	Micromys minutus	HARVEST MOUSE (E)	LR/nt
78	Microtus guentheri		LR/nt
79	Miniopterus schreibersi	COMMON BENTWING BAT (E) SCHREIBER'S LONG-FINGERED BAT (E)	LR/nt
80	Misgurnus fossilis	WEATHERFISH (E)	LR/nt
81	Monachus monachus	MEDITERRANEAN MONK SEAL (E) PHOQUE-MOINE MÉDITERRANÉEN (F)	CR C2a
82	Mus spicilegus	STEPPE MOUSE (E)	LR/nt
83	Muscardinus avellanarius	COMMON DORMOUSE (E) HAZEL DORMOUSE (E)	LR/nt
84	Mustela lutreola	EUROPEAN MINK (E)	EN A1ace
85	Myomimus roachi	MOUSE-TAILED DORMOUSE (E)	VU D2
86	Myotis bechsteini	BECHSTEIN'S BAT (E)	VU A2c
87	Myotis capaccinii	LONG-FINGERED BAT (E)	VU A2c
88	Myotis emarginatus	GEOFFROY'S BAT (E)	VU A2c
89	Myotis myotis	GREATER MOUSE-EARED BAT (E) LARGE MOUSE-EARED BAT (E)	LR/nt
90	Nannospalax leucodon		VU D2
91	Neogobius fluviatilis		DD

#	[Scientific Name]	Common Name(s)	Red List
93	Neogobius kessleri	KESSLER'S GOBY (E)	DD
94	Neogobius melanostomus		DD
95	Neogobius syrman		DD
96	Niphargus valachicus		VU B1+2bcde
97	Numenius tenuirostris	LONG-BILLED CURLEW (E) SLENDER-BILLED CURLEW (E) COURLIS À BEC GRÊLE (F) ZARAPITO FINO (S)	CR C2b, D
98	Nyctalus lasiopterus	GIANT NOCTULE (E)	LR/nt
99	Nyctalus leisleri	LESSER NOCTULE (E)	LR/nt
100	Otis tarda	GREAT BUSTARD (E) GRANDE OUTARDE (F) OUTARDE BARBUE (F) AVUTARDA EUROASIÁTICA (S) AVUTARDA (S)	VU A2c
101	Oxyura leucocephala	WHITE-HEADED DUCK (E) ÉRISMATURE À TÊTE BLANCHE (F) MALVASÍA (S)	EN A1acde
102	Parnassius apollo	APOLLO BUTTERFLY (E) APOLLO (E) MOUNTAIN APOLLO (E) APOLO (S) MARIPOSA APOLLO (S)	VU A1cde
103	Pelecanus crispus	DALMATIAN PELICAN (E) PÉLICAN DALMATE (F) PÉLICAN FRISÉ (F) PELÍCANO CEÑUDO (S) PELÍCANO RIZADO (S)	LR/cd
104	Pelecus cultratus	ZIEGE (E)	DD
105	Phalacrocorax pygmeus	PYGMY CORMORANT (E)	LR/nt
106	Phocoena phocoena (Black Sea stock)	HARBOUR PORPOISE (E)	VU A1c, C1+2b
107	Phocoena phocoena	COMMON PORPOISE (E) HARBOUR PORPOISE (E) MARSOUIN COMMUN (F)	VU A1cd
108	Pinus peuce		LR/nt
109	Platyla orthostoma		DD
110	Proserpinus proserpina	NONE KNOWN (E) WILLOWHERB HAWKMOTH (E)	DD
111	Pseudanodonta complanata		LR/nt
112	Rhinolophus blasii	BLASIUS' HORSESHOE BAT (E)	LR/nt
113	Rhinolophus euryale	MEDITERRANEAN HORSESHOE BAT (E)	VU A2c

#	[Scientific Name]	Common Name(s)	Red List
114	Rhinolophus ferrumequinum	GREATER HORSESHOE BAT (E)	LR/nt
115	Rhinolophus hipposideros	LESSER HORSESHOE BAT (E)	VU A2c
116	Rhinolophus mehelyi	MEHELY'S HORSESHOE BAT (E)	VU A2c
117	Rosalia alpina	ROSALIA LONGICORN (E)	VU A1c
118	Rutilus frisii	BLACK SEA ROACH (E)	DD
119	Sabanejewia aurata	GOLDSIDE LOACH (E)	DD
120	Saga pedo	PREDATORY BUSH CRICKET (E)	VU B1+2bd
121	Sciurus vulgaris	RED SQUIRREL (E)	LR/nt
122	Sicista subtilis	SOUTHERN BIRCH MOUSE (E)	LR/nt
123	Spermophilus citellus	EUROPEAN SOUSLIK (E) EUROPEAN SQUIRREL (E)	VU A1c
124	Stizostedion marinum		DD
125	Stizostedion volgensis	VOLGA ZANDER (E)	DD
126	Syngnathus abaster		DD
127	Testudo graeca	COMMON TORTOISE (E) GREEK TORTOISE (E) MOORISH TORTOISE (E) SPUR-THIGHED TORTOISE (E) TORTUE MAURESQUE (F) TORTUGA MORA (S)	VU A1cd
128	Testudo hermanni	HERMANN'S TORTOISE (E) TORTUE D'HERMANN (F) TORTUGA MEDITERRÁNEA (S)	LR/nt
129	Tetrax tetrax	LITTLE BUSTARD (E) OUTARDE CANEPETIÈRE (F) SISÓN (S)	LR/nt
130	Theodoxus transversalis		DD
131	Triturus cristatus	GREAT CRESTED NEWT (E) WARTY NEWT (E)	LR/cd
132	Triturus dobrogicus	DANUBE CRESTED NEWT (E)	DD
133	Troglocaris anophthalmus		VU B1+2cde
134	Tursiops truncatus	BOTTLE-NOSED DOLPHIN (E) BOTTLENOSE DOLPHIN (E) GRAND DAUPHIN (F) SOUFFLEUR (F) TURSIOPS (F) PEZ MULAR (S) TURSIÓN (S)	DD
135	Unio crassus		LR/nt
136	Vimba melanops	MALAMÍDA (E)	VU A1ce

#	[Scientific Name]	Common Name(s)	Red List
137	Vipera ursinii	MEADOW VIPER (E) ORSINI'S VIPER (E) VIPÈRE D'ORSINI (F) VIPÈRE DES STEPPES (F)	EN A1c+2c
138	Viviparus acerosus		LR/nt
139	Vormela peregusna ssp. peregusna	EUROPEAN MARBLED POLECAT (E)	VU A1cd
140	Zingel streber	STREBER (E)	VU A1ce+2ce
141	Zingel zingel	ZINGEL (E)	VU A1ce+2ce
142	Zosterisessor ophiocephalus		DD

Citation: Hilton-Taylor, C. (compiler) 2000. *2000 IUCN Red List of Threatened Species.* IUCN, Gland, Switzerland and Cambridge, UK. xviii + 61pp. Downloaded on **05 December 2001**.

2000 IUCN RED LIST FOR BULGARIA AND CLASSIFICATION DEFINITIONS

EXTINCT (EX) - A taxon is Extinct when there is no reasonable doubt that the last individual has died.

EXTINCT IN THE WILD (EW) - A taxon is Extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR) - A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria (A to E) as described below.

ENDANGERED (EN) - A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria (A to E) as described below.

VULNERABLE (VU) - A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the criteria (A to E) as described below.

LOWER RISK (LR) - A taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.

Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

DATA DEFICIENT (DD) A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution is lacking. Data Deficient is therefore not a category of threat or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and threatened status. If the range of a taxon is suspected to be relatively circumscribed, if a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

NOT EVALUATED (NE) A taxon is Not Evaluated when it is has not yet been assessed against the criteria.

The criteria for Critically Endangered, Endangered and Vulnerable

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the following criteria (A to E):

A) Population reduction in the form of either of the following:

1) An observed, estimated, inferred or suspected reduction of at least 80% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

a) direct observation

b) an index of abundance appropriate for the taxon

c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

d) actual or potential levels of exploitation

e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.

2) A reduction of at least 80%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B) Extent of occurrence estimated to be less than 100 km^2 or area of occupancy estimated to be less than 10 km^2, and estimates indicating any two of the following:

1) Severely fragmented or known to exist at only a single location.

2) Continuing decline, observed, inferred or projected, in any of the following:

a) extent of occurrence

b) area of occupancy

c) area, extent and/or quality of habitat

d) number of locations or subpopulations

e) number of mature individuals

3) Extreme fluctuations in any of the following:

a) extent of occurrence

b) area of occupancy

c) number of locations or subpopulations

d) number of mature individuals

C) Population estimated to number less than 250 mature individuals and either:

1) An estimated continuing decline of at least 25% within three years or one generation, whichever is longer or

2) A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

a) severely fragmented (i.e. no subpopulation estimated to contain more than 50 mature individuals)

b) all individuals are in a single subpopulation

D) Population estimated to number less than 50 mature individuals.

E) Quantitative analysis showing the probability of extinction in the wild is at least 50% within 10 years or three generations, whichever is the longer.

ENDANGERED (EN)

A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the following criteria (A to E):

A) Population reduction in the form of either of the following:

- **1)** An observed, estimated, inferred or suspected reduction of at least 50% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
  - a) direct observation
  - b) an index of abundance appropriate for the taxon
  - c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
  - d) actual or potential levels of exploitation
  - e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
- **2)** A reduction of at least 50%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d), or (e) above.

B) Extent of occurrence estimated to be less than 5000 km^2 or area of occupancy estimated to be less than 500 km^2, and estimates indicating any two of the following:

- **1)** Severely fragmented or known to exist at no more than five locations.
- **2)** Continuing decline, inferred, observed or projected, in any of the following:
  - a) extent of occurrence
  - b) area of occupancy
  - c) area, extent and/or quality of habitat
  - d) number of locations or subpopulations
  - e) number of mature individuals
- **3)** Extreme fluctuations in any of the following:
  - a) extent of occurrence
  - b) area of occupancy
  - c) number of locations or subpopulations
  - d) number of mature individuals

C) Population estimated to number less than 2500 mature individuals and either:

- **1)** An estimated continuing decline of at least 20% within five years or two generations, whichever is longer, or
- **2)** A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:
  - a) severely fragmented (i.e. no subpopulation estimated to contain more than 250 mature individuals)
  - b) all individuals are in a single subpopulation.

D) Population estimated to number less than 250 mature individuals.

E) Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or five generations, whichever is the longer.

VULNERABLE (VU)

A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the following criteria (A to E):

A) Population reduction in the form of either of the following:

1) An observed, estimated, inferred or suspected reduction of at least 20% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

a) direct observation

b) an index of abundance appropriate for the taxon

c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

d) actual or potential levels of exploitation

e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

2) A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B) Extent of occurrence estimated to be less than 20,000 km^2 or area of occupancy estimated to be less than 2000 km^2, and estimates indicating any two of the following:

1) Severely fragmented or known to exist at no more than ten locations.

2) Continuing decline, inferred, observed or projected, in any of the following:

a) extent of occurrence

b) area of occupancy

c) area, extent and/or quality of habitaty

d) number of locations or subpopulations

e) number of mature individuals

3) Extreme fluctuations in any of the following:

a) extent of occurrence

b) area of occupancy

c) number of locations or subpopulations

d) number of mature individuals

C) Population estimated to number less than 10,000 mature individuals and either:

1) An estimated continuing decline of at least 10% within 10 years or three generations, whichever is longer, or

2) A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

a) severely fragmented (i.e. no subpopulation estimated to contain more than 1000 mature individuals)

b) all individuals are in a single subpopulation

D) Population very small or restricted in the form of either of the following:

1) Population estimated to number less than 1000 mature individuals.

2) Population is characterized by an acute restriction in its area of occupancy (typically less than 100 km^2) or in the number of locations (typically less than five). Such a taxon would thus be prone to the effects of human activities (or stochastic events whose impact is increased by human activities) within a very short period of time in an unforeseeable future, and is thus capable of becoming Critically Endangered or even Extinct in a very short period.

E) Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

Annex F

List of Persons Interviewed

Annex F

List of Persons Interviewed

DONORS

Contact	Title	Organization
Anna Georgieva	Agriculture Sector Project Officer	The World Bank
Blaga Djourdjin	Program Operations, Infrastructure and Environment	The World Bank
Rossen Vassilev	Executive Director	Bulgarian-Swiss Biodiversity Conservation Program
Darka Radonova	Pirin Project Management Planning Team Leader	Bulgarian-Swiss Biodiversity Conservation Program
Gerassim Gerassimov	Program Officer	Cooperation Office - Embassy of Switzerland
Krustina Mandova	Country Program Officer	ECOLINKS, REC
Mihail Staynov	Project Manager	REC
Pierre Galland	Director	Pro Natura / Bulgarian-Swiss Biodiversity Conservation Program
Silvia Kirova	Project Manager	REC
Teodora Andreeva	Advisor Environment	EU Delegation of the European Commission to Bulgaria
Violeta Kogalniceanu	Regional Program Manager	ECOLINKS, REC
Yulian Dimitrov	Extension Worker	BIOSELENA – Foundation for Organic Agriculture

GOVERNMENT OF BULGARIA

Contact	Title	Organization
Aneta Borissova Ivanova	Director	Regional Inspectorate of Environment and Waters, Plovdiv - Ministry of Environment and Waters
Dimitar Batalov	Forestry Engineer - Secretary-General	Ministry of Agriculture and Forestry, National Forestry Board
Dimitar Georgiev Dimitov	Senior expert on Biodiversity and Protected Areas -	Regional Inspectorate of Environment and Waters, Plovdiv - Ministry of Environment and Waters
Dimitar Hadjinikolov	Deputy Minister of Economy	Ministry of Economy
Dimitar Vergiev	Executive Director	Executive Environmental Agency - Ministry of Environment and Waters
Dolores Arssenova	Minister	Ministry of Environment and Waters
Dr. Hristo Bojinov	Director	National Nature Protection Service - Ministry of Environment and Waters
Dr. Lachezar Matev	Counselor	European Integration Directorate - Ministry of Foreign Affairs
Meglena Kuneva	Deputy Minister	EU accession, Ministry of Environment and Waters
Fathme Iliaz	Deputy Minister	Ministry of Environment and Waters
Georgi Tinchev	Chief of Nature Parks and Protected Areas	Ministry of Agriculture and Forestry
Ilia Simeonov	Chief Forestry Engineer	National Forestry Board - Ministry of Agriculture and Forestry
Kliment Dilianov	Head of International Cooperation Sector	Ministry of Environment and Waters
Krassimira Avramova	Director - Environment Monitoring and Sustainable Development	Executive Environmental Agency - Ministry of Environment and Waters
Milena Nikolova	Expert, Agri-Environmental Section	Rural Development Directorate - Ministry of Agriculture and Forestry
Mimi Pramatarova	Director	Rila National Park - Ministry of Environment and Waters
Nela Rachivts	Director	Central Balkan National Park, Ministry of Environment and Waters
Philip Zaikov	Section head	Rila National Park
Viara Stefanova	Expert, Agri-Environmental Section	Rural Development Directorate - Ministry of Agriculture and Forestry
Violeta Roiatchka	Senior Officer	International Co-operation Department - Ministry of Environment and Waters

UNITED STATES GOVERNMENT

Contact	Title	Organization
Anna Phillips	Program Manager Central & Eastern Europe	EPA
Bonny Walter	Urban Programs Advisor	USAID/DG/LGUD
Bob Archer	Physical Scientist	USAID/E&E/EEST/EI
Debra McFarland	Mission Director	USAID/Sofia
Dimitar Tsekov	Director – Environmental Program	US Peace Corps
Holly Higgins	Agricultural Counselor	USDA/FAS
Ira Birnbaum	Energy Efficiency Specialist	USAID/E&E/EEST/EI
Jay Lee	Environmental Officer	USAID/Sofia
Jeff Orrey	AAAS Fellow – ECOLINKS	USAID/E&E/EEST/ENR
Liz Mayhew	Program Manager Central & Eastern Europe	USDA
Mila Boshnakova	Agricultural Specialist	USDA/FAS
Nadereh Lee	Dem./Gov. program	USAID/Sofia
Nick Higgins	Bulgarian Desk Officer	USAID/Washington
Nikolay Yarmov	Senior Advisor: Enterprise Development	USAID/Sofia
Reginald A. Miller	Senior Commercial Officer	US Embassy - US Commercial Service
Stanislava Dimitrova	Commercial Specialist – ECOLINKS	US Embassy - US Commercial Service
Ivanka Tsankova	USAID Program Office	USAID/Sofia

NON GOVERNMENT ORGANIZATIONS

Contact	Title	Organization
Antonia Chilikova	Director	Rhodope Youth Eco-organization
Dora Yankova	Executive Director	Center for Sustainable Mountain Development
Dr. Petar Iankov	Chief Specialist	Bulgarian Society for the Protection of Birds
Melissa Nix	Peace Corps Volunteer	Green Balkans
Rayka Hauser	Bulgarian Projects Officer	WWF - International, Danube-Carpathian Program
Sergey Dereliev	Conservation Officer	Bulgarian Society for the Protection of Birds
Svetlin Gankov	Expert	Green Balkans
Sylvia Andonova	Development Officer	Bulgarian Society for the Protection of Birds
Youlie Enchev	Executive Director	Regional Association of Municipalities – Central Stara Planina
Zlatka Nikolova	Executive Director	Association of Rhodope Municipalities

PRIVATE SECTOR

Contact	Title	Organization
Carsten Germer	Consultant	Private Sector/UNDP
Ilia Nemsky	Director	Private Sector/Neri & Asiago LTD.
Kamelia Georgieva	Team Leader	ARD - Biodiversity Conservation and Economic Growth Project
Peter Hetz	Senior Resident Advisor and Team Leader	ARD - Biodiversity Conservation and Economic Growth Project
Kotse Ikonomov	Private Consultant	Former Director of the National Forestry Board
Prof. Dr. Stoycho Karov	President	Private Sector - ECOFARM

ANNEX G

Bibliography

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Bibliography

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